DOCUMENT RESUME

ED 073 679 EM 010 849

| | |
|---|---|
| AUTHOR | Smith, Robin C. |
| TITLE | The AEDS Large School System Survey. Report of Findings. |
| INSTITUTION | Association for Educational Data Systems, Washington, D.C. |
| PUB DATE | Nov 72 |
| NOTE | 57p. |
| EDRS PRICE | MF-$0.65 HC-$3.29 |
| DESCRIPTORS | Administrative Policy; Automation; Computer Assisted Instruction; Computer Oriented Programs; *Computers; Computer Science Education; *Data Processing; *Educational Administration; Educational Technology; Electronic Data Processing; Elementary Education; Information Processing; Programing Languages; *Public School Systems; School District Spending; School Planning; Secondary Education; *Surveys |

ABSTRACT

The findings of a survey of selected administrative computer applications in large public school districts are presented in this report. Using a three part written questionnaire, the investigators polled 99 school districts throughout the United States and examined the responses of 55. Two major hypotheses were tested: 1) the difference in the frequency with which the benefits resulted from various applications; and 2) the various benefits which resulted from different means of development. The study reported several conclusions: 1) the most frequent computer uses were for financial accounting applications with personnel applications second; 2) contractor staffs are used less often than inhouse personnel; 3) most of the applications in use were designed for first or second generation computers; and 4) the financial applications were the most operable and successful of all the applications. The report noted that it is quite apparent that school districts are not reaping the rewards of third generation computers. (MC)

AEDS

NOVEMBER 1972

ED 073679

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

# The AEDS Large School System Survey

# REPORT OF FINDINGS

EM 010849

PREPARED FOR
THE ASSOCIATION FOR EDUCATIONAL DATA SYSTEMS

BY
DR. ROBIN C. SMITH

AEDS

NOVEMBER 1972

ED 073679

# The AEDS Large School System Survey

## REPORT OF FINDINGS

PREPARED FOR
THE ASSOCIATION FOR EDUCATIONAL DATA SYSTEMS

BY
DR. ROBIN C. SMITH

PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY

Robin C. Smith

AEDS

TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER.

Copyright 1972 by the Association for Educational Data Systems

Printed by McDonnell Douglas Automation Company, St. Louis, Missouri as a service to the educational community.

## FOREWORD

One of the more difficult jobs of the educational systems administrator is to keep abreast of what is going on in other school districts. As systems planners are making decisions concerning future computer applications, they need to have available to them information about what applications and methods of development have been successful in other school districts, and the benefits that resulted from these applications.

Recognizing this need, the Association for Educational Data Systems sponsored a nation-wide survey of large public school districts in the spring of 1972. The purposes of the AEDS Large School System Survey were:

1. To determine the state-of-the-art in the development of administrative computer applications in large public school districts;

2. To identify what methods of development have been most successful in developing certain administrative applications;

3. To identify the major benefits resulting from selected administrative applications in large school districts;

4. To compile data about large school district computer centers and operational administrative applications which may be disseminated as reference data to school districts, and others in need of such data.

This report presents the results and findings of the AEDS Large School System Survey. It has been prepared in the interest of disseminating important information which should prove useful to the educational systems community. We believe that the survey and this report are the first of their kind to examine the relative success of administrative computer applications in public school districts.

AEDS is indebted to Dr. Robin C. Smith who designed the survey instrument, conducted the survey, tabulated and analyzed the data, and prepared this survey report. The Montgomery County Public Schools provided keypunch and computer processing services. The George Washington University also provided computer processing services as well as procedural consultation. McDonnell Douglas Automation Company provided duplicating services. Many thanks are due to these organizations and also to the Chief Computer Systems Executives who gave of their time to complete the survey.

Russell Weitz
President, AEDS

TABLE OF CONTENTS


| Section | | Page |
|---|---|---|
| 1. | OVERVIEW AND CONCLUSIONS . . . . . | 1 |
| | Provides a summary of the research study; describes the survey instrument; provides operational definitions; presents the major conclusions | |
| 2. | SCHOOL SYSTEM DIRECTORY . . . . . | 7 |
| | Provides alphabetically by school district within state the name and address of responding school systems, and the name, title, and telephone number of each Chief Computer Systems Executive | |
| 3. | ORGANIZATIONAL CHARACTERISTICS . . . . . | 12 |
| | Summary tables, and detail tables by school district, showing the number and types of information systems staff, $ budgeted for information systems and the school system, pupil population, and the computer configuration for respondents | |
| 4. | OPERATIONAL APPLICATIONS . . . . . | 18 |
| | Summary tables, and detail tables by school district, showing the applications operational in each participating school district. For selected applications, the source of staffing, source of software, and generation of computer are indicated | |
| 5. | BENEFIT SUMMARY . . . . . | 33 |
| | Summary tables showing the benefits resulting from selected operational applications; those applications and methods of development reported as more successful are identified | |
| APPENDICES . . . . . | | 42 |
| | Survey instrument<br>Definitions of applications<br>Definitions of benefits | |

LIST OF TABLES


| Table | | Page |
|---|---|---|
| 1. | Organizational characteristics, summary, March/April, 1972 | 13 |
| 2. | Organizational characteristics by school district, March/April, 1972 | 15 |
| 3. | Administrative computer applications partially or completely operational, reported as of March/April, 1972, summary | 19 |
| 4. | Administrative computer applications partially or completely operational, reported as of March/April, 1972, by school district | 20 |
| 5. | Methods of development for selected administrative computer applications reported as of March/April, 1972, summary | 32 |
| 6. | Benefits reported to have resulted to a significant or moderate degree as of March/April, 1972, summary | 35 |
| 7. | Rank-order of applications according to frequency of success | 36 |
| 8. | Rank-order of benefits for successful applications, according to frequency reported | 36 |
| 9. | Applications reported as showing positive or negative benefits more frequently than might be expected when compared to the general responses for the application area | 37 |
| 10. | Applications reported as showing positive or negative benefits more frequently than might be expected when compared to the general responses for all application areas | 38 |
| 11. | Applications reported as showing positive or negative benefits more frequently than might be expected when compared to the general responses, for certain methods of development | 39 |

SECTION 1

# OVERVIEW AND CONCLUSIONS

## Summary

This study examined selected administrative computer applications in large public school districts, and certain factors which affect success of such applications. Success was defined in terms of the frequency with which benefits were reported to result from applications. The benefits included improved information, improved efficiency, extended service, and reduced costs.

Two major factors affecting success were studied: (1) type of application and (2) method of development. The applications selected for analysis were representative of the five functional areas of administrative activity in public school districts: personnel, pupil, financial, facilities and equipment, and instructional/non-instructional material. Methods of development included source of staffing, source of software, and generation of computer.

A written questionnaire was administered in March/April, 1972, by mail, to the Chief Computer Systems Executive of large public school districts. The population under study consisted of 99 school districts in the U.S.A. with pupil populations of 40,000 pupils or more. Sixty-one responses were received of which 55 were usable.

Respondents were asked to check a list of applications to indicate which were operational. For representative applications, they were asked to indicate whether benefits resulted to a significant or moderate degree, or whether detrimental effects resulted. For these same applications, they were asked to indicate which methods of development were used. Certain demographic data were gathered about the information systems function and the school district.

The first major hypothesis examined the differences in the frequency with which the benefits were reported to result among the various applications. The differences were tested for the five application areas and for each of the four benefit categories. Of 26 contingency tables examined, 13 were statistically significant at the .05 level or less. For selected applications, and certain benefit categories, it was concluded that application type is a factor affecting success of the administrative computer applications under study.

The second major hypothesis analyzed the various benefits which resulted using different methods of development. The differences in the frequency of benefits were tested for each of the 20 application types considering the various benefit categories. Forty-five or 25 percent of the 180 subhypotheses tested proved statistically significant at the .05 level or less. It was concluded that for selected methods of development and certain benefit categories, method of development is also a factor affecting success.

Another related conslusion of importance was that generally, regardless of application, source of software and generation of computer are factors affecting success of these selected administrative computer applications.

## The Survey Instrument

The survey instrument consisted of three parts. Part I dealt with questions describing the school district's environmental characteristics. These questions pertained to the information systems staffing and budget, computer configuration, and information on how to contact the Chief Computer Systems Executive of the school district.

Part II dealt with identifying operational applications in each school district. Part III was directed toward identifying benefits resulting and methods of development for selected operational applications. The survey instrument is included as Appendix A to this report (page 43).

## Operational Definitions

Certain terms require definition to clarify the scope of this study. The following paragraphs discuss these definitions.

Administrative application. -- those computer applications of a business nature which address the problems of administering the public school system. Administrative applications include such applications as financial accounting, employee data base, instructional materials inventory, pupil attendance, etc. They exclude instructional applications such as computer problem solving in mathematics, computer assisted instruction, vocational EDP courses, etc. Part II of the survey instrument (page 44) identifies the applications under study. Appendix B describes each application (page 47).

Application benefits. -- the positive results or gains that accrue to a school system as a consequence of successfully implementing an administrative computer application. These include such factors as improved information, improved efficiency, extended service and reduced costs.[1] Each of these broad benefits may be subdivided into more specific benefits. For example, improved efficiency may be subdivided into:

Improved staff performance
Improved staff utilization
Improved procedures for collecting, maintaining, or reporting information; and,
Greater flexibility to expand and modify procedures

Part III of the survey instrument (page 45) identifies the benefits considered. Appendix C (page 50) gives additional descriptions of the benefits.

Application development (systems development). -- the design and implementation of computer and manual procedures for a functional area of school system activity in order to achieve specific operational improvements (benefits).

Factors affecting success. -- those factors which influence the achievement of application benefits which are subject to administrative decision on the part of school district administrators and which may normally be varied in the short run. For this research, factors affecting success are confined to methods of development, and application type.

---

[1]Adapted from Theodore Leroy Ploughman, "The Implementation, Operation, and Evaluation of Regional Data Processing Services Provided or Anticipated by Michigan's Intermediate School Districts" (unpublished Ph.D. dissertation, University of Michigan, 1968).

Large public school district. -- a public school district of 40,000 pupils or more, as of September, 1970.

Methods of development. -- alternative mixes of staff, software, and computer hardware usage which may be considered for any given application. For example, staff may be obtained via external contractors, or technical expertise may be established within the school district. Software may be developed inhouse or obtained from another organization. An application design may be implemented originally on third generation hardware, conversion from an existing first or second generation system, or run under emulation. Part III of the survey instrument **(page 46)** identifies the specific methods of development considered in this research.

Success. -- the achievement of intended benefits for a given administrative computer application to a significant or moderate degree as perceived by the Chief Computer Systems Executive for a school system.

## General Findings

Environmental characteristics. -- Table 1, **page 13,** summarizes the environmental characteristics for responding information systems centers. Almost half the respondents have less than 20 staff in their information systems function, while slightly more than half have a budget of under $400 thousand. Closely paralleling figures for private industry, IBM main-frames constitute 70% of the configurations. A surprising number of the configurations, 52%, are what might be called small core users. Almost half the primary configurations are three or more years old.

Operational applications. -- Table 3, **page 19,** reflects the numbers and percent of respondents in rank-order which reported each administrative computer application as partially, or completely operational. Large school districts are evidently following the traditional pattern of computer systems usage paralleling private industry. Emphasis is placed primarily on the "bread and butter" applications in the financial and personnel areas. Pupil applications receive some emphasis perhaps because of the availability of generalized software in the pupil scheduling area, and because of the salability of computer applications when applied to popular school-based problems. The less frequently implemented applications are in the instructional/non-instructional material area, and the facilities and equipment area.

Methods of development. -- The survey asked participants to identify which of certain methods of development were associated with selected operational applications. The data **(Table 5, p. 32)** indicate that large school districts have a decided propensity toward the use of inhouse staff for development of administrative computer applications. Contractor staff are rarely used. Combined inhouse and contractor staff are used to a limited extent.

Public school systems appear to be characterized by a "do-it-yourself" syndrome. Perhaps the "inhouse only" tendency is a contributing factor to the apparent slow advancement of the educational information systems community when compared to private industry. Contractor resources provide a valuable source of technical and business skills which can complement and strengthen the capabilities of inhouse staff.

The data indicate further that large school districts generally implement administrative applications as original development. An existing application software package from another organization is used only in isolated instances. The tendency to not use software packages stems from a number of factors. There are apparently few

software packages available on the commercial market which are workable in a public school district. The traditional shortage of funds in public school districts likely discourages private industry from developing such software.

The survey data indicate that school districts have implemented many of the same applications covering a wide number of application areas. It is reasonable to believe that in some application areas, there is sufficient common-ground among school districts to allow the transfer and enhancement of application software, more than it is done today. A likely result would be lower implementation costs and time, at no real reduction in benefits.

A series of questions were asked which dealt with the generation of computer hardware used, and the nature of that use for selected applications. The data indicate that for some applications, as much as 25 percent of the school districts using third generation equipment are operating the application in first or second generation mode on that equipment. Said differently, in these instances, the advantages of third generation equipment for supporting advanced application design techniques are not being effectively used.

Roughly 25 percent of the applications are currently operating on first or second generation equipment. This and the previous finding lend support to conclusions indicated by others that public school districts are as much as half a decade behind the times in the use of the systems technology. One could attribute this to reluctance on the part of educators to commit limited funds to non-instructional areas.

It is encouraging to note that well over half of all applications are operating on third generation hardware, and as such, are hopefully using the hardware to full advantage.

Successful applications. -- Success may be defined as the achievement of pre-stated objectives. Objectives may be expressed as the benefits to result from an application. Since objectives will vary from school system to school system, the criteria for evaluating success may also vary.

The analysis of successful applications to follow assumes that all benefits considered contribute with equal weight to success. Four categories of benefits were evaluated: improved information, improved efficiency, extended service, and reduced costs. For each benefit area, applications were identified which resulted in the given benefit most frequently.

Refer to Table 7, p. 36. The financial applications were the most frequently reported as successful. Following in order were the instructional/non-instructional material applications, the facilities and equipment applications, the personnel applications, and the pupil applications.

The implications of the ranking are important. Those applications most often implemented are not ranked as the most beneficial. The personnel and pupil applications are second and third most frequently implemented, respectively. However, they are the last two application areas in the success ranking.

The instructional/non-instructional applications are the last two application areas in terms of frequency implemented. In the success ranking, they are second and third. This suggests that generally, school districts are not implementing those applications which tend to most often produce benefits. The financial applications are excepted, since they are first in both the success ranking and in frequency implemented.

Benefits Achieved. -- An analysis of those applications considered to be more successful provides a basis for determining which benefit categories appear to result most frequently.

Refer to Table 8, **page 36.** Considering all benefits equally weighted, improved information results most frequently. Following in order are improved efficiency, extended service, and reduced costs.

The findings confirm the experience of this researcher--that the benefits of computer applications are not necessarily cost savings, but rather are more frequently in the area of improved information. The lower ranking of the extended service benefit also suggests that public school districts have yet to fully tap the capabilities of the computer to address problems in the management decision-making area.

Factors Affecting Success. -- Twenty-six statistical tests were performed to determine if benefits were dependent upon the type of application. The tests showed statistically significant findings in half the instances, identifying which applications showed an unusual tendency to produce positive or negative benefits. Refer to Tables 9 and 10, **pages 37 and 38.**

One hundred and eighty statistical tests were performed to determine if benefits were dependent upon the method of development used for a given application. This analysis was carried out for each of 20 applications. Twenty-five percent of the tests proved statistically significant. The analysis generally identified those applications for which certain methods of development show a tendency to produce positive or negative benefits for each application. Refer to Table 11, **page 39.**

## Conclusions

Analysis of the data presented in the remaining sections of this report leads to the following general conclusions. The statistical procedures upon which these conclusions are based may be obtained from the author through AEDS.

Conclusion 1. -- Of those applications selected for study, financial applications are the most frequently implemented administrative computer applications in large public school districts. Pupil applications and personnel applications are the next most frequently implemented. The instructional/non-instructional material applications are the next to least frequent, and the facilities and equipment applications are the least frequently implemented. See Table 3, **page 19.**

Conclusion 2. -- Large school districts generally use inhouse staff for the development of the administrative computer applications under study. Contractor staff are rarely used. Combined inhouse and contractor staff are used to a limited extent. See Table 5, **page 32.**

Conclusion 3. -- Large school districts generally implement those administrative computer applications under study as original development. An existing application software package from another organization is used only in isolated instances. See Table 5, **page 32.**

Conclusion 4. -- A majority of administrative computer applications studied in large public school districts are operating either as converted and enhanced applications or as applications originally designed and developed for operation on a third

generation computer. However, a major proportion of the applications were designed for first or second generation equipment and are still operating in that mode either on first or second generation hardware or under emulation. See Table 5, **page 32.**

Conclusion 5. -- Considering all benefits equally weighted, the financial applications, of those studied, are the most frequently reported as successful. The second most frequently reported as successful are the instructional/non-instructional material applications. Next, are the facilities and equipment applications. Next to least frequently reported as successful are the personnel applications and the least frequently reported as successful are the pupil applications. See Table 6, **page 35,** and Table 7, **page 36.**

Conclusion 6. -- Considering all benefits equally weighted, improved information results most frequently from the successful applications under study. Improved efficiency results second most frequently. Extended service results next to least frequently, and reduced costs result least often. See Table 6, **page 35,** and Table 8, **page 36.**

Conclusion 7. -- For selected applications and certain benefit categories, application type is a factor affecting success of the administrative computer applications under study in large public school districts. See Table 9, **page 37,** and Table 10, **page 38.**

Conclusion 8. -- For selected methods of development and certain benefit categories, method of development is a factor affecting success of the administrative computer applications under study in large public school districts. See Table 11, **page 39.**

## Suggested Areas for Further Research

The survey analysis points to a number of needs which exist in the educational information systems community. A need exists to provide a greater level of precision in the identification and measurement of benefits resulting from applications. Further research should examine workable means of affecting software exchange among public school districts. Coupled with that area of research is the need to examine ways for standardizing terminology and documentation, and for disseminating information about the developmental activities of public school districts.

It is apparent from this study that a number of school districts are not reaping the rewards of the advanced third generation technology. It is important to examine ways in which the computer installation of school districts can be upgraded. Such research would contribute substantially to the advancement of the educational systems community.[1]

Robin C. Smith

---

[1]AEDS wishes to acknowledge the use and adaptation of material from Robin C. Smith, "An Examination of Major Factors Affecting Success in the Development of Administrative Computer Applications in Large Public School Districts" (unpublished D.B.A. dissertation, George Washington University, 1972).

SECTION 2

SCHOOL SYSTEM DIRECTORY

| | |
|---|---|
| Birmingham City Schools<br>Birmingham, ALABAMA | William R. Barnes, Jr.<br>Director, Computer Services<br>205/328-7803 |
| Mobile Public Schools<br>504 Government Street<br>Mobile, ALABAMA 36602 | Chester M. Morgan<br>Coordinator of Automation<br>205/438-6011, Ext. 393 |
| Fresno Unified School District<br>2348 Mariposa<br>Fresno, CALIFORNIA 93721 | Roger A. Youngman<br>Data Processing Manager<br>209/224-7363 |
| Gardon Grove Unified School District<br>10331 Stanford Avenue<br>Garden Grove, CALIFORNIA | Frederick J. Burns<br>Director of Educational Data Processing<br>714/638-6591 |
| Los Angeles Unified School District<br>1425 South San Pedro Street<br>Los Angeles, CALIFORNIA 90051 | C. Douglas Brown<br>Director of Data Processing<br>213/687-3751 |
| Mt. Diablo Unified School District<br>1936 Carlotta<br>Concord, CALIFORNIA 94521 | C. Carlson<br>Administrative Assistant<br>415/682-8000, Ext. 2/3 |
| Oakland Unified School District<br>1025 Second Avenue<br>Oakland, CALIFORNIA 94556 | Del. K. Williams<br>Director of Data Processing<br>415/836-2622, Ext. 535 |
| Sacramento City Unified School District<br>1619 N Street<br>Sacramento, CALIFORNIA 95814 | Tom U. Sumida<br>Director, Data Processing<br>916/444-6060, Ext. 210 |
| San Diego Unified Schools<br>4100 Normal Street<br>San Diego, CALIFORNIA 92103 | John P. Crane<br>Director of Data Systems<br>714/298-4681, Ext. 288 |
| San Juan Unified Schools<br>3738 Walnut Avenue<br>Carmichael, CALIFORNIA 95608 | Robert B. Whitaker<br>Director of Data Processing<br>916/484-2374 |
| Denver Public Schools<br>414 14th Street<br>Denver, COLORADO 80202 | Thomas J. Hanson<br>Executive Director - Education and Management Information Systems<br>303/266-2255, Ext. 393 |

| | |
|---|---|
| Jefferson County Public Schools R-1<br>809 Quail Street<br>Lakewood, COLORADO 80215 | Nick Gangwish<br>Director of Data Processing<br>303/237-6971, Ext. 317, 318 |
| Brevard County School Board<br>3205 South Washington Avenue<br>Titusville, FLORIDA 32922 | David L. Griffith<br>Data Processing Administrator<br>305/267-3311, Ext. 256 |
| School Board of Broward County<br>1320 Southwest Fourth Street<br>Fort Lauderdale, FLORIDA 33310 | William J. English<br>Director of Data Processing<br>305/525-3311, Ext. 371 |
| Dade County Public Schools<br>1410 N. E. Second Avenue<br>Miami, FLORIDA 33132 | Daniel Yuhr<br>Director of Data Processing<br>305/261-2351 |
| School Board of Hillsborough County<br>1407 East Columbus Drive<br>Tampa, FLORIDA 33605 | Mary Esther Raker (Mrs.)<br>Director, Data Processing<br>813/247-2191 |
| Palm Beach County School District<br>3323 Belvedere Road<br>West Palm Beach, FLORIDA 33401 | John W. Kelly<br>Director of Data Processing<br>305/683-0050, Ext. 230 |
| School Board of Pinellas County<br>1960 East Druid Road<br>Clearwater, FLORIDA 33518 | Walter J. Croke<br>Director<br>813/442-1171, Ext. 277 |
| Chicago Board of Education<br>228 North Lasalle<br>Chicago, ILLINOIS 60601 | Harry Strasburg<br>Assistant Superintendent<br>312/64160 |
| Fort Wayne Community Schools<br>1230 South Clinton Street<br>Fort Wayne, INDIANA 46802 | Lee Hoffman<br>Systems Analyst<br>219/422-3575, Ext. 203 |
| School City of Gary<br>620 East Tenth Place<br>Gary, INDIANA 46402 | Charles E. Martin<br>Director of Data Processing<br>219/886-3111, Ext. 350 |
| Shawnee Mission Public Schools<br>7235 Antioch<br>Shawnee Mission, KANSAS 66204 | R. C. Nicoll<br>Director -- Computer Center<br>913/831-1900, Ext. 260 |
| Jefferson County Board of Education<br>3334 Newburg Road<br>Louisville, KENTUCKY 40218 | Vito M. Brucchieri<br>Assistant Superintendent<br>502/456-3131 |

Caddo Parish School Board
Midway Street
Shreveport, LOUISIANA 70821

Paul H. Dupont
Supervisor of Data Processing
318/423-5121, Ext. 62

East Baton Rouge Parish School Board
1050 South Foster Drive
Baton Rouge, LOUISIANA 70821

Albert L. Brown
Data Processing Manager
504/926-2700, Ext. 371

New Orleans Public Schools
4300 Hiawatha Street
New Orleans, LOUISIANA 70118

Gary Kueber
Director of Computer Services
504/947-992, Ext. 244

Anne Arundel County Public Schools
188 Green Street
Annapolis, MARYLAND 21401

Matt R. Peterson
Data Processing Management Officer
301/268-3345, Ext. 71

Baltimore City Public Schools
3 East Twenty-Fifth Street
Baltimore, MARYLAND 21218

Carroll Lloyd
Supervisor -- Systems and Procedures
301/467-3704

Baltimore County
6901 North Charles Street
Baltimore, MARYLAND 21204

R. F. Nayden
Director of Data Processing
301/494-4266

Montgomery County Public Schools
850 North Washington Street
Rockville, MARYLAND 20850

James W. Jacobs
Associate Superintendent
301/279-3581

Prince George's County Public Schools
Upper Marlboro, MARYLAND 20870

Roy M. Ducharm
Supervisor, Management Systems
Information Services
301/627-3378

Boston Schools
15 Beacon Street
Boston, MASSACHUSETTS 02178

James W. Daily
Director of Data Processing
617/445-4155

Detroit Board of Education
5057 Woodward
Detroit, MICHIGAN 48202

Joseph E. Sucher
Department Head, Data Processing
313/833-7900, Ext. 2337

Flint Community Schools
923 East Kearsley Street
Flint, MICHIGAN 48502

Muriel Allen
Director
313/238-1631, Ext. 476

St. Louis Public Schools
911 Locust Street
St. Louis, MISSOURI 63101

Douglas F. Benn
Director, Data Processing Division
314/231-3720, Ext. 280

| | |
|---|---|
| Clark County School District<br>2832 East Flamingo Road<br>Las Vegas, NEVADA 89109 | Ronald L. Jones<br>Director of Data Processing<br>702/736-5405 |
| Albuquerque Public Schools<br>P. O. Box 1927<br>Albuquerque, NEW MEXICO 87103 | Thomas C. Loveland<br>Director of Data Processing<br>505/842-3639 |
| Winston-Salem/Forsyth County<br>Granville Drive<br>Winston-Salem, NORTH CAROLINA 27102 | James Sifford<br>Director of Research<br>919/727-2586 |
| Newark Board of Education<br>31 Green Street<br>Newark, NEW JERSEY | James F. Delaney<br>Director of Data Processing<br>201/622-1472 |
| Cincinnati Public Schools<br>230 East Ninth Street<br>Cincinnati, OHIO 45202 | J. D. Hartley<br>Director of Data Processing<br>513/621-7010, Ext. 222 |
| Toledo Public Schools<br>Manhattan and Elm Streets<br>Toledo, OHIO 43608 | Donald Spomler<br>Director Computer Operations<br>419/729-5111 |
| Tulsa Public School System<br>Thirty-first: New Haven<br>Tulsa, OKLAHOMA 74101 | W. T. Workman<br>Director Budget and Finance<br>918/743-3381, Ext. 231 |
| Portland Public Schools<br>631 N. E. Clackamas<br>Portland, OREGON | R. W. Hermanson<br>Administrator<br>503/285-3623 |
| Philadelphia Public Schools<br>Twenty-first and Parkway<br>Philadelphia, PENNSYLVANIA 19103 | Anthony J. D'Alonzo<br>Executive Director of Data Processing<br>215/448-3269 |
| Pittsburgh Public Schools<br>341 South Bellefield Avenue<br>Pittsburgh, PENNSYLVANIA 15213 | Seon H. Cho<br>Director of Computer Services<br>412/682-1700 |
| School District of Greenville County<br>Station B., Box 5575<br>Greenville, SOUTH CAROLINA 29606 | Joe M. Forrester<br>Director of Data Processing<br>802/242-6450, Ext. 203, 293, 291 |

| | |
|---|---|
| Memphis City Schools<br>2597 Avery<br>Memphis, TENNESSEE 38112 | John F. Merrill<br>Director, Computer Division<br>901/323-8311, Ext. 291 |
| Nashville Davidson County<br>2601 Bransford Avenue<br>Nashville, TENNESSEE 37204 | Tom Shacklett<br>Data Processing Manager<br>615/747-5246 |
| Austin Ind. School District<br>Guadalupe Street<br>Austin, TEXAS 78752 | Carlos Rodriguez<br>Data Processing Supervisor<br>512/452-9331, Ext. 56 |
| Ft. Worth Public Schools<br>3210 West Lancaster<br>Fort Worth, TEXAS 76107 | A. V. Majors<br>Director of Data Processing<br>817/336-8691 |
| Houston Ind. School District<br>3830 Richmond Avenue<br>Houston, TEXAS 77027 | Gene Ellisor<br>Director and Manager, Data Processing<br>713/623-5266 |
| Fairfax County Public School System<br>10700 Page Avenue<br>Fairfax, VIRGINIA 22030 | V. Robert Hurley<br>Data Processing Coordinator<br>703/691-2588 |
| Norfolk City Schools<br>800 East City Hall Avenue<br>Norfolk, VIRGINIA 23510 | William Howlett, Jr.<br>Supervisor of Data Processing<br>703/441-2458 |
| Richmond Public Schools<br>312 North Ninth Street<br>Richmond, VIRGINIA 23219 | John G. Schnieder<br>Director of Data Processing<br>703/649-5113 |
| Seattle Public Schools<br>816 Fourth Avenue, North<br>Seattle, WASHINGTON 98109 | Charles Hammond<br>Manager -- Educational Data Systems<br>206/587-3450 |
| Kanawha County Schools<br>200 Elizabeth Street<br>Charleston, WEST VIRGINIA 25311 | N. Michael Slater<br>Director<br>304/348-7760 |
| Milwaukee Public Schools<br>P. O. Box Drawer 10K<br>Milwaukee, WISCONSIN 53201 | Vacant<br>Director of Data Processing<br>414/475-8315 |

SECTION 3

ORGANIZATIONAL CHARACTERISTICS

**Pages 13-14: Table 1**.--Organizational characteristics, summary, March/April, 1972.

- in summary, shows the number of school districts at various levels of staffing for different types of positions in the information systems function
- in summary, shows the number of school districts at various levels of school system staffing, pupil population, school system budget, and information systems budget
- in summary, shows the number of school districts possessing computer hardware for each manufacturer and model; core size; own, lease, rent information; and the number of years the CPU has been installed

NOTE TO TABLE 1: Responses for interval "0" indicate that the category was left blank on the school district response.

**Pages 15-17: Table 2**.--Organizational characteristics by school district, March/April, 1972

- provides the detail organizational characteristics of each school district including:

  Information Systems Staffing
  District Staffing
  FY72 Budget
  Pupil Population
  Computer Configuration

TABLE 1.--Organizational characteristics, summary, March/April, 1972

Management/ Supervision Information Systems

| Interval | 1-2 | 3-4 | 5-6 | 7+ |
|---|---|---|---|---|
| Frequency | 21 | 23 | 7 | 4 |
| % | 38 | 42 | 13 | 7 |

Clerical Support Information Systems

| Interval | 0 | 1-2 | 3-4 | 5-6 | 7+ |
|---|---|---|---|---|---|
| Frequency | 5 | 31 | 11 | 3 | 5 |
| % | 9 | 56 | 20 | 5 | 9 |

Systems Information Systems

| Interval | 0 | 1-2 | 3-4 | 5-6 | 7+ |
|---|---|---|---|---|---|
| Frequency | 14 | 23 | 7 | 3 | 6 |
| % | 25 | 42 | 13 | 5 | 10 |

Analyst-programmers Information Systems

| Interval | 0 | 1-2 | 3-4 | 5-6 | 7+ |
|---|---|---|---|---|---|
| Frequency | 12 | 21 | 9 | 6 | 7 |
| % | 22 | 38 | 16 | 11 | 13 |

Programmers Information Systems

| Interval | 0 | 1-2 | 3-4 | 5-6 | 7-8 | 9+ |
|---|---|---|---|---|---|---|
| Frequency | 11 | 11 | 15 | 9 | 3 | 6 |
| % | 20 | 20 | 27 | 16 | 5 | 11 |

Computer Operations & Support Information Systems

| Interval | 0 | 2-4 | 5-7 | 8-10 | 11-13 | 14-16 | 17-19 | 20+ |
|---|---|---|---|---|---|---|---|---|
| Frequency | 1 | 7 | 13 | 11 | 5 | 1 | 5 | 13 |
| % | 2 | 13 | 24 | 20 | 9 | 2 | 9 | 24 |

Total DP Staff

| Interval | 6-19 | 20-39 | 40-59 | 60-79 | 80+ |
|---|---|---|---|---|---|
| Frequency | 23 | 19 | 6 | 2 | 5 |
| % | 42 | 35 | 11 | 4 | 9 |

School System Staff

| Interval* | 0 | 3-5 | 6-8 | 9-11 | 12-14 | 15+ |
|---|---|---|---|---|---|---|
| Frequency | 4 | 22 | 14 | 2 | 6 | 7 |
| % | 7 | 40 | 25 | 4 | 11 | 13 |

*in thousands

FY 72 School System Budget

| Interval* | 0 | 20-39 | 40-69 | 70-99 | 100-129 | 130-159 | 160+ |
|---|---|---|---|---|---|---|---|
| Frequency | 2 | 8 | 22 | 8 | 3 | 4 | 8 |
| % | 4 | 15 | 40 | 15 | 5 | 7 | 15 |

*in millions

FY 72 Information Systems Budget

| Interval* | 0 | 1-2 | 3-4 | 5-6 | 7-8 | 9-10 | 11-12 | 13+ |
|---|---|---|---|---|---|---|---|---|
| Frequency | 1 | 16 | 15 | 9 | 4 | 3 | 2 | 5 |
| % | 2 | 29 | 27 | 16 | 7 | 5 | 4 | 9 |

*in 100 thousands

TABLE 1.--continued

Hardware

| Manufacturer | IBM | | | | | | | | | | Honeywell | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | 1401 | 20 | 25 | 30 | 40 | 50 | 135 | 145 | 155 | 115 | 200 | 430 | 1250 | 1251 |
| Frequency | 7 | 1 | 4 | 7 | 13 | 2 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| % | 12 | 2 | 7 | 12 | 23 | 4 | 2 | 7 | 2 | 2 | 2 | 2 | 2 | 2 |

| Manufacturer | Burroughs | | NCR | | UNIVAC | | RCA | |
|---|---|---|---|---|---|---|---|---|
| Model | 2500 | 3500 | C200 | 315 | 1106 | 9400 | 2 | 70/45 |
| Frequency | 1 | 2 | 3 | 1 | 1 | 1 | 1 | 1 |
| % | 2 | 4 | 5 | 2 | 2 | 2 | 2 | 2 |

Core

| Core (k) | 8-16 | 32 | 64-70 | 96 | 120-131 | 150 | 192 | 256 | 292 | 384-393 | 512 | 1024 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency | 9 | 6 | 14 | 2 | 6 | 1 | 6 | 7 | 1 | 2 | 1 | 1 |
| % | 16 | 11 | 25 | 4 | 11 | 2 | 11 | 12 | 2 | 4 | 2 | 2 |

Own, Lease, Rent

| O/L/R | O | L | R | Comb. |
|---|---|---|---|---|
| Frequency | 10 | 23 | 15 | 9 |
| % | 17 | 40 | 26 | 16 |

Number of Years Installed (As of 6/72)

| Interval* | < 1 | 1-1.9 | 2-2.9 | 3-3.9 | 4-4.9 | 5-5.9 | 6+ |
|---|---|---|---|---|---|---|---|
| Frequency | 12 | 12 | 7 | 5 | 9 | 3 | 7 |
| % | 22 | 22 | 13 | 9 | 16 | 5 | 13 |

*years

Pupil Population

| Interval* | 40-50 | 60-70 | 80-90 | 100-110 | 120-130 | 140+ |
|---|---|---|---|---|---|---|
| Frequency | 13 | 15 | 9 | 2 | 6 | 10 |
| % | 24 | 27 | 16 | 4 | 11 | 18 |

*in thousands

TABLE 2.--Organizational characteristics by school district, March/April, 1972.

| | Item | Birmingham City | Mobile | Fresno | Garden Grove | Los Angeles | Mt. Diablo | Oakland | Sacramento | San Diego | San Juan | Denver | Jefferson County | Brevard County | Broward County | Dade County | Hillsborough County | Palm Beach County | Pinellas County | Chicago |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ALA. | | CALIFORNIA | | | | | | | | COLO. | | FLORIDA | | | | | | IL. |
| INFORMATION SYSTEMS STAFF | Mgmt/Supervision | 2 | 1 | 3 | 2 | 11 | 1 | 3 | 4 | 6 | 1 | 3 | 2 | 3 | 4 | 4 | 4 | 1 | 5 | 6 |
| | Clerical Support | | | 1 | 3 | 4 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 5 | 3 | 4 | 1 | 7 | 34 |
| | Systems | | | 1 | 2 | 9 | | 1 | 1 | 4 | | 4 | 4 | 1 | 6 | 8 | 3 | 2 | 1 | 16 |
| | Analyst-Prog. | 1 | 1 | 3 | 2 | 35 | | 2 | 5 | 15 | 1 | 1 | | 3 | 2 | | | 1 | 1 | 2 |
| | Programmers | 1 | 1 | 3 | | | 3 | 3 | | | 3 | 7 | 4 | 4 | 9 | 17 | 9 | 6 | 3 | 16 |
| | Computer Ops & Support | 3 | 7 | 7 | 6 | 95 | 6 | 10 | 9 | 27 | 7 | 13 | 12 | 8 | 18 | 25 | 11 | 6 | 2 | 61 |
| | TOTAL | 7 | 10 | 18 | 15 | 154 | 11 | 21 | 21 | 55 | 14 | 30 | 24 | 21 | 44 | 57 | 31 | 17 | 20 | 135 |
| DISTR. STAFF | TOTAL (in thousands) | 4 | 5 | 5 | 3 | 60 | 3 | 6 | 4 | 10 | 4 | 12 | 5 | 5 | 11 | 23 | 10 | 6 | 8 | 47 |
| FY 72 BUDGET | School System (in millions) | 28 | 32 | 52 | 40 | 800 | 46 | 80 | 47 | 150 | 46 | 124 | 60 | 44 | 98 | 270 | 78 | 64 | 66 | 769 |
| | Computer Based Info. Systems (in 100 thousands) | 1 | 1 | 3 | 3 | 22 | 2 | 6 | 3 | 11 | 2 | 5 | 4 | 5 | 8 | 12 | 6 | 2 | 3 | 30 |
| PUP. POP. | TOTAL (in thousands) | 60 | 70 | 60 | 50 | 700 | 50 | 70 | 50 | 160 | 50 | 100 | 60 | 60 | 110 | 240 | 100 | 70 | 80 | 560 |
| COMPUTER CONFIGURATION | Manufacturer | IBM | HW | IBM | BU | IBM* | IBM | HW* | IBM | IBM | IBM | UN* | IBM* | IBM | IBM* | IBM | IBM | IBM | HW | IBM* |
| | Model | 360 | 115 | 40 | 3500 | 50 | 1401 | 430 | 30 | 40 | 1401 | 1106 | 30 | 40 | 145 | 155 | 30 | 25 | 1251 | 145 |
| | Total Core (in K) | 64 | 32 | 128 | 150 | 384 | 16 | 192 | 64 | 192 | 16 | 292 | 64 | 192 | 256 | 393 | 96 | | 65 | 1024 |
| | Own, Lease, Rent | O | R | L | L | L/O | R | R | O | R | L | O | L/O | R/O | R | L | " | L | L | O |
| | M/Y Installed | 6/68 | 11/70 | /70 | 7/70 | 10/68 | 65 | 12/71 | 2/68 | 65 | 11/63 | 9/70 | 1/71 | 10/68 | 1/72 | 3/72 | 5/70 | 12/71 | 11/68 | 10/71 |

* Also have one or more additional computers

TABLE 2.--continued

| | Item | Fort Wayne | Gary | Shawnee Mission | Jefferson County | Caddo Parish | East Baton Rouge | New Orleans | Anne Arundel | Baltimore City | Baltimore County | Montgomery County | Prince George's County | Boston | Detroit | Flint | St. Louis | Clark County | Albuquerque | Winston-Salem/ Forsyth |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | IND. | | KS. | KY. | LA. | | | MARYLAND | | | | | MASS. | MICH. | | MO. | NV. | NM. | NC. |
| INFORMATION SYSTEMS STAFF | Mgmt/Supervision | 2 | 2 | 4 | 2 | 3 | 2 | 4 | 3 | 3 | 2 | 8 | 4 | 4 | 3 | 2 | 2 | 2 | 3 | 1 |
| | Clerical Support | 1 | 1 | 2 | 1 | 90 | 4 | 2 | 1 | 1 | 4 | 23 | | 2 | 3 | 3 | 2 | 3 | 5 | 1 |
| | Systems | 1 | 1 | 2 | | | 1 | | 4 | 5 | 2 | 21 | | 1 | 5 | 1 | 3 | 2 | | |
| | Analyst-Prog. | 1 | | 5 | 3 | 2 | 2 | 4 | | | 3 | 8 | 18 | 2 | 4 | 1 | 4 | | 2 | 1 |
| | Programmers | 5 | 3 | 2 | | | 2 | | 6 | 7 | 4 | 19 | | 2 | 4 | 1 | 7 | 4 | 3 | 2 |
| | Computer Ops & Support | 5 | 7 | 12 | 10 | 4 | 3 | 8 | 15 | 25 | 10 | 38 | 23 | 10 | 17 | 2 | 51 | 8 | 21 | 1 |
| | TOTAL | 15 | 14 | 27 | 16 | 99 | 14 | 18 | 29 | 41 | 25 | 117 | 45 | 21 | 36 | 10 | 69 | 19 | 34 | 6 |
| DISTR. STAFF | TOTAL (in thousands) | 4 | 4 | 4 | 6 | 5 | 6 | 8 | 5 | 16 | 14 | 10 | 14 | 7 | 20 | 5 | 13 | 6 | 7 | 2 |
| FY 72 BUDGET | School System (in millions) | 38 | 37 | 32 | 70 | 47 | 48 | 64 | 70 | 197 | 139 | 159 | 151 | 100 | 240 | 56 | 85 | 67 | 52 | 27 |
| | Computer Based Info. Systems (in 100 thousands) | 3 | 2 | 7 | 3 | 1 | 2 | 3 | 4 | 10 | 5 | 20 | 9 | 3 | 6 | 2 | 7 | 5 | 4 | 1 |
| PUP. PCE. | TOTAL (in thousands) | 40 | 40 | 40 | 90 | 60 | 70 | 110 | 70 | 200 | 130 | 130 | 160 | 90 | 270 | 40 | 120 | 70 | 80 | 50 |
| COMPUTER CONFIGURATION | Manufacturer | IBM | NCR | IBM | HW | IBM | BU | NCR | IBM | IBM* | IBM | IBM* | IBM | IBM | IBM* | UN | IBM* | RCA | HW | BU |
| | Model | 25 | C200 | 40 | 200 | 1401 | 3500 | C200 | 30 | 40 | 40 | 145 | 40 | 1401 | 30 | 9400 | 145 | 2 | 1250 | 2500 |
| | Total Core (in K) | 32 | 32 | 256 | 65 | 16 | 120 | 64 | 64 | 196 | 196 | 256 | 256 | 16K | 64 | 64 | 256 | 131 | 65 | 70 |
| | Own, Lease, Rent | L | R | R | L | L | O | L | L | R | | L | L/R | L | O | L | R/L | L | O | R |
| | M/Y Installed | 10/71 | 11/70 | 12/68 | 11/66 | 8/69 | 7/71 | 11/70 | 1/72 | 2/69 | 68 | 12/71 | 11/69 | 10/64 | 4/66 | 9/71 | 12/71 | 2/71 | 7/69 | 3/71 |

* Also have one or more additional computers

TABLE 2.--continued

| | Item | Newark | Cincinnati | Toledo | Tulsa | Portland | Philadelphia | Pittsburgh | Greenville County | Memphis City | Nashville Davidson | Austin | Ft. Worth | Houston | Fairfax County | Norfolk City | Richmond | Seattle | Kanawha County | Milwaukee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | NJ. | OHIO | | OK. | OR. | PA. | | SC. | TENN. | | TEXAS | | | VIRGINIA | | | WA. | W.V. | WI. |
| INFORMATION SYSTEMS STAFF | Mgmt/Supervision | 40 | 2 | 4 | 3 | 5 | 7 | 4 | 1 | 5 | 4 | 1 | 4 | 5 | 3 | 2 | 5 | 6 | 2 | 4 |
| | Clerical Support | 2 | 4 | 1 | 2 | 10 | 4 | 5 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | | 2 | 6 | 1 | |
| | Systems | 4 | 1 | 2 | 1 | | 10 | 2 | 1 | 5 | | | | 1 | 3 | 1 | 3 | 3 | | 4 |
| | Analyst-Prog. | | 1 | 1 | | | 9 | 5 | | 5 | 4 | | 5 | 5 | 3 | 2 | | 13 | 2 | |
| | Programmers | 6 | | 3 | 5 | 9 | 11 | 6 | 1 | 5 | | 1 | | 6 | 3 | 2 | 6 | 5 | 2 | 9 |
| | Computer Ops & Support | 14 | 12 | 9 | 8 | 6 | 26 | 4 | 4 | 18 | 8 | 5 | 7 | 19 | 12 | 6 | 17 | 26 | 7 | 19 |
| | TOTAL | 66 | 20 | 20 | 19 | 30 | 67 | 26 | 8 | 40 | 17 | 8 | 18 | 38 | 26 | 13 | 33 | 59 | 14 | 36 |
| DISTR. STAFF | TOTAL (in thousands) | 5 | 5 | 4 | 6 | | | 7 | 4 | 13 | 7 | 6 | 6 | 18 | 13 | 5 | 5 | | 5 | |
| FY 72 BUDGET | School System (in millions) | 107 | 75 | 55 | 44 | | | 115 | 32 | 90 | 70 | 45 | 67 | 183 | | 34 | 40 | 97 | 48 | 133 |
| | Computer Based Info. Systems (in 100 thousands) | 6 | 2 | 3 | 2 | | 15 | 5 | 1 | 5 | 3 | 1 | 4 | 7 | | 5 | 4 | 10 | 2 | 7 |
| PUP. POP. | TOTAL (in thousands) | 80 | 80 | 620 | 80 | | 300 | 70 | 60 | 130 | 90 | 50 | 80 | 230 | 130 | 60 | 40 | 80 | 50 | 130 |
| COMPUTER CONFIGURATION | Manufacturer | IBM | IBM | IBM | IBM | | IBM* | NCR* | | IBM* | IBM | IBM* | RCA | IBM | IBM | IBM | IBM | IBM | NCR | IBM |
| | Model | 40 | 1401 | 25 | 1401 | | 40 | C200 | | 40 | 25 | 20-1 | 70/45 | 40 | 1401 | 30 | 30 | 40 | 315 | 40 |
| | Total Core (in K) | 256 | 8 | 32 | 16 | | 192 | 64 | | 128 | 32 | 12 | 131 | 192 | 16 | 64 | 64 | 256 | 10 | 128 |
| | Own, Lease, Rent | O/L | O | L | L | | L | R | | O | L | R | L | R/O | [illegible] | O | R | R | L | R |
| | M/Y Installed | 1/71 | 12/62 | 2/70 | 6/64 | | | 9/70 | | 3/67 | 7/70 | 7/67 | 5/68 | 7/69 | 9/67 | 6/69 | 4/70 | 10/66 | 11/67 | 1/68 |

* Also have one or more additional computers

## SECTION 4

## OPERATIONAL APPLICATIONS

**Page 19:** Table 3.--Administrative Computer applications partially or completely operational, reported as of March/April, 1972

- reflects a summary of the number of school districts reporting the various administrative computer applications as partially or completely operational

**Pages 20-31:** Table 4.--Administrative computer applications partially or completely operational, reported as of March/April, 1972, by school district

- provides the detail list of operational applications for each responding school district

NOTE TO TABLE 4: This table indicates for certain applications, the method of development used to implement an application. Part III of the survey instrument **(page 46)** asked the school districts to identify which of certain methods of development were used to implement the application. The numbers indicated in the body of the table specify which methods were indicated for the application by the responding school district.

For example, the notation "314" indicates that the particular school district checked question 3 under source of staffing, question 1 under source of software, and question 4 under computer generation. 314 thus indicates that the school district used combined inhouse and contractor staff (3), software development was original (1), and the design was originally developed for a third generation computer.

**Page 32:** Table 5.--Methods of development for selected administrative computer applications reported as of March/April, 1972, summary

- summarizes the responses concerning methods of development for certain applications under study

TABLE 3.--Administrative computer applications partially or completely operational, reported as of March/April, 1972.

| Application[a] | Number | Percentage[b] |
|---|---|---|
| First Quarter | | |
| 02 Pupil scheduling | 52 | 95 |
| 11 General expenditure accounting | 51 | 93 |
| 14 Payroll | 50 | 91 |
| 05 Test scoring & analysis | 49 | 89 |
| 20 Employee data base | 49 | 89 |
| 15 Accounts payable | 45 | 82 |
| 04 Report cards | 40 | 73 |
| 13 Budget development | 38 | 69 |
| 17 Salary cost projections | 38 | 69 |
| 03 Pupil attendance | 36 | 66 |
| 39 Warehouse inventory | 36 | 66 |
| Second Quarter | | |
| 06 Pupil registration | 33 | 60 |
| 16 School lunch inc. & exp. acct. | 33 | 60 |
| 25 Employee retirement | 33 | 60 |
| 01 Pupil data base | 30 | 55 |
| 07 Pupil census | 29 | 53 |
| 23 Certification | 27 | 49 |
| 40 Purchasing | 27 | 49 |
| 38 Library & textbook ordering | 26 | 47 |
| 19 Job cost accounting | 25 | 46 |
| 21 Position control | 24 | 44 |
| 26 Substitute teachers | 24 | 44 |
| Third Quarter | | |
| 41 Instr. mat. catalogues | 22 | 40 |
| 12 Accounts receivable | 21 | 38 |
| 44 Sch. lunch plan., ord., & inv. | 20 | 36 |
| 31 Equipment inventory | 18 | 33 |
| 36 Instructional materials inv. | 14 | 26 |
| 27 Facilities inventory | 13 | 24 |
| 08 Enrollment forecasting | 12 | 22 |
| 42 Library ops. support | 11 | 20 |
| 10 Guidance & counseling | 10 | 18 |
| 18 PPBS program cost analysis | 9 | 16 |
| 24 Inservice training | 9 | 16 |
| Fourth Quarter | | |
| 22 Recruitment & hiring | 8 | 15 |
| 37 Inst. mat. booking & scheduling | 8 | 15 |
| 28 Facil. constr. proj. control | 6 | 11 |
| 09 Health & immunization | 5 | 9 |
| 30 Bus sched. & routing | 5 | 9 |
| 43 Bibliographic data base | 5 | 9 |
| 34 Equip. utilization & evaluation | 4 | 7 |
| 32 Preventive maint. scheduling | 3 | 6 |
| 29 Work order requests scheduling | 2 | 4 |
| 35 Future facilities planning | 2 | 4 |
| 33 Facilities util. & evaluation | 0 | 0 |

[a]Grouped by quarter.

[b]Number divided by fifty-five responding school systems, times 100. This tabulation includes only the 55 out of 61 responses, which were received prior to the cutoff date.

TABLE 4.--Administrative computer applications partially or completely operational, reported as of Mar/Apr, 1972 by school district

| | Application | Birmingham City | Mobile | Fresno | Garden Grove | Los Angeles | Mt. Diablo | Oakland | Sacramento | San Diego | San Juan | Denver | Jefferson County | Brevard County | Broward County | Dade County | Hillsborough County | Palm Beach County | Pinellas County | Chicago | Ft. Wayne | Gary | Shawnee Mission | Jefferson County |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ALA | | CALIFORNIA | | | | | | | | COLO. | | FLORIDA | | | | | | ILL. | IND. | | KA. | KY. |
| PUPIL APPLICATIONS | Pupil Data Base | | | | 123 | | | 314 | 123 | 124 | 121 | 124 | 114 | 124 | 123 | 323 | | | | 123 | 124 | 123 | 123 | |
| | Pupil Scheduling | 112 | | 314 | 314 | | 311 | 314 | 114 | 114 | 311 | 314 | 124 | 313 | 123 | 113 | 114 | 122 | 314 | 313 | 113 | 314 | 112 | 314 |
| | Pupil Attendance | | | 124 | 123 | | 121 | 314 | 122 | | 121 | 124 | 124 | 124 | 123 | | 122 | | 124 | | | 123 | 124 | 124 |
| | Report Cards | | | 124 | 124 | | 121 | 314 | 122 | 124 | 121 | 124 | 124 | 124 | 123 | 123 | 122 | 122 | 124 | | 122 | 123 | 124 | 124 |
| | Test Scoring & Analysis | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| | Pupil Registration | | | X | X | | X | | X | X | X | X | X | | X | | X | X | X | | X | X | X | |
| | Pupil Census | | | X | X | | X | X | X | X | X | | X | | | | X | X | X | | | | | X |
| | Enrollment Forecasting | | | | X | | | X | X | X | X | | X | | X | | X | X | | | | | | |
| | Health & Immunization | | | | | | | X | X | X | | | | | | | | | X | | | | | |
| | Guidance & Counselling | | | | | | | X | X | X | X | | | X | X | | | X | | | | | | |

TABLE 4.--
Continued

| | Application | Caddo Parish | E. Baton Rouge | New Orleans | Anne Arundel | Baltimore City | Baltimore County | Montgomery County | Prince George's County | Boston | Detroit | Flint | St. Louis | Clark County | Albuquerque | Winston-Salem Forsyth | Newark | Cincinnati | Toledo | Tulsa | Portland | Philadelphia | Pittsburgh | Greenville County |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LA. | | | MARYLAND | | | | | MASS. | MICH. | | MO. | NEV. | NM. | NC. | NJ. | OHIO | | OK. | OR. | PA. | | SC. |
| PUPIL APPLICATIONS | Pupil Data Base | | | | 122 | 322 | 324 | | 123 | 121 | | 123 | 124 | 124 | 113 | | | | | | 311 | 314 | 122 | |
| | Pupil Scheduling | 111 | 114 | 114 | 312 | 314 | 314 | 314 | 113 | 121 | 123 | 123 | 114 | 214 | 114 | 124 | 124 | | 112 | 121 | 311 | 122 | 312 | 114 |
| | Pupil Attendance | 111 | 124 | | 122 | 322 | 324 | 123 | 123 | | | | 123 | 123 | | 124 | | | | 121 | 321 | 213 | | |
| | Report Cards | 121 | 124 | | 122 | | | | 124 | 121 | | 123 | 123 | 123 | 113 | 124 | 124 | 121 | 124 | | 311 | 322 | | |
| | Test Scoring & Analysis | | X | X | X | X | X | X | X | X | X | X | X | X | | X | | X | X | X | | | X | X |
| | Pupil Registration | | X | X | | | X | | X | X | | X | X | X | X | | | | | X | | | X | X |
| | Pupil Census | | X | | | X | | | X | | | | X | | X | X | | X | | X | | | X | X |
| | Enrollment Forecasting | | | | | | | | | | | X | X | | | X | | X | | | | | | |
| | Health & Immunization | | | | | | | | | | | | | | X | | | | | | | | | |
| | Guidance & Counselling | | | | | | | | | | | | X | | | | | | | X | | X | | |

TABLE 4.--
Continued

| | Application | Memphis City | Nashville Davidson | Austin | Ft. Worth | Houston | Fairfax County | Norfolk City | Richmond | Seattle | Kanawha County | Milwaukee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TENN. | | TEXAS | | | VIRGINIA | | | WA. | WV. | WIS. |
| PUPIL APPLICATIONS | Pupil Data Base | | | 124 | | 124 | | | 123 | 124 | | 124 |
| | Pupil Scheduling | 314 | 312 | 114 | 114 | 114 | 114 | 314 | 114 | 314 | 111 | 313 |
| | Pupil Attendance | 323 | 123 | 124 | 124 | | 121 | 122 | 123 | 124 | | 123 |
| | Report Cards | 123 | | 124 | 124 | 124 | | 122 | 123 | 124 | 121 | 323 |
| | Test Scoring & Analysis | X | X | X | X | X | X | X | X | X | X | X |
| | Pupil Registration | X | | X | | X | | | X | X | | X |
| | Pupil Census | X | X | X | | | X | X | | X | | X |
| | Enrollment Forecasting | | | | | | | | | | | X |
| | Health & Immunization | X | | | | | | | | | | |
| | Guidance & Counselling | | | | | | | | | | | |

TABLE 4.--
Continued

| | Application | Birmingham City | Mobile | Fresno | Garden Grove | Los Angeles | Mt. Diablo | Oakland | Sacramento | San Diego | San Juan | Denver | Jefferson County | Brevard County | Broward County | Dade County | Hillsborough County | Palm Beach County | Pinellas County | Chicago | Ft. Wayne | Gary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ALA. | | CALIFORNIA | | | | | | | | COLO. | | FLORIDA | | | | | | ILL. | IND. | |
| FINANCIAL APPLICATIONS | General Expenditure Acctg | | 121 | 124 | 114 | 124 | 121 | 314 | 123 | 124 | 121 | 123 | 122 | 124 | 124 | | | | 124 | 123 | 314 | 122 |
| | Accts Receivable | | 121 | 124 | | | | 314 | 123 | | | | 122 | 124 | 124 | | | | 124 | | | 122 |
| | Budget Development | | 121 | 124 | 114 | 124 | 121 | 314 | 123 | 124 | 121 | 323 | | 124 | 124 | 324 | | 122 | 124 | 123 | | 122 |
| | Payroll | 314 | 121 | 124 | | 123 | 121 | 314 | 123 | 124 | 121 | 124 | 322 | 124 | 124 | 323 | 122 | 122 | 124 | 123 | 122 | 322 |
| | Accts Payable | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | X | | X | X | X | X |
| | School Lunch Income & Exp. Acctg | | X | X | X | X | X | X | X | X | X | | X | | X | | X | X | X | X | | X |
| | Salary Cost Projections | | X | X | X | X | X | | X | X | X | X | X | X | X | | X | X | X | X | | |
| | PPBS Program Cost Analysis | | | | X | | | | | X | | X | X | | X | X | X | X | | | | |
| | Job Cost Acctg | | | | | X | | X | X | X | | X | | X | X | | | | | | | X |
| PERSONNEL APPLICATIONS | Employee Data Base | 124 | 121 | | 123 | 123 | 121 | 314 | 123 | 124 | 121 | 124 | 122 | 124 | 123 | 124 | 122 | 122 | 124 | 123 | | 322 |
| | Position Control | | | | 124 | 124 | | | 123 | 124 | 121 | | 122 | | 123 | | 124 | 222 | 124 | 123 | | |
| | Recruitment & Hiring | | | | 124 | | | | | | | | | | | | | | | | | |
| | Certification | | 121 | | 123 | 123 | 121 | 314 | 123 | | 121 | 123 | 122 | | 123 | | 122 | 112 | 124 | | | |
| | Inservice Training | | | | | | X | | | | X | X | | X | X | | | X | X | | | |
| | Employee Retirement | | | X | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | | |
| | Substitute Teachers | | X | | | | X | X | X | X | X | X | | X | X | | X | | X | | | |

TABLE 4.--
Continued

| | Application | Shawnee Mission | Jefferson County | Caddo Parish | E. Baton Rouge | New Orleans | Anne Arundel | Baltimore City | Baltimore County | Montgomery County | Prince George's County | Boston | Detroit | Flint | St. Louis | Clark County | Albuquerque | Winston-Salem Forsyth | Newark | Cincinnati | Toledo | Tulsa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | KA. | KY. | LA. | | | MARYLAND | | | | | MASS. | MICH. | | MO. | NEV. | NM. | NC. | NJ. | OHIO | | OK. |
| FINANCIAL APPLICATIONS | General Expenditure Acctg | 124 | 124 | | 124 | 122 | 312 | 124 | 324 | 122 | 314 | 121 | 322 | 123 | 322 | 123 | 124 | 124 | 124 | 121 | 124 | 121 |
| | Accts Receivable | 124 | | | | | 322 | | | | 314 | | | 123 | 322 | | 123 | 124 | | | 124 | 121 |
| | Budget Development | | 124 | | 124 | | 322 | | 324 | 124 | | | 124 | 123 | 123 | 123 | | | 124 | | 124 | 121 |
| | Payroll | 123 | 124 | 121 | 123 | 122 | 322 | | 324 | 122 | 123 | | 122 | 123 | 123 | 123 | 123 | 124 | 123 | 121 | 124 | 121 |
| | Accts Payable | X | X | | X | | X | | X | X | X | | | X | X | X | | X | | X | X | X |
| | School Lunch Income & Exp. Acctg | | | X | | | X | | X | X | X | | X | X | X | | | X | | X | X | X |
| | Salary Cost Projections | X | X | | X | X | | | X | X | X | | | X | X | X | X | | | | X | |
| | PPBS Program Cost Analysis | | | | | | | | | | X | | X | | | | | | | | | |
| | Job Cost Acctg | | | | X | | X | X | | | X | X | X | X | X | X | X | | | X | | |
| PERSONNEL APPLICATIONS | Employee Data Base | 123 | 124 | 121 | 123 | 122 | 122 | 124 | | 124 | 123 | 121 | | 123 | 124 | 123 | 113 | 124 | 124 | 121 | 124 | 121 |
| | Position Control | | | | 124 | | | | 324 | | 124 | | | 123 | 124 | 123 | | | 124 | | | |
| | Recruitment & Hiring | 124 | | | | | | | 324 | | | | 124 | | | 123 | | | | | | |
| | Certification | | 124 | 121 | 124 | | | | | | | | 122 | 123 | | 123 | | 124 | | | 124 | |
| | Inservice Training | | | X | | | | | | | | | | | | | | | | | | |
| | Employee Retirement | X | | X | X | | | | X | | X | | X | X | X | | | X | | X | X | |
| | Substitute Teachers | X | | X | X | | X | | | | X | | X | X | X | | X | | | | | |

TABLE 4.--
Continued

| | Application | Portland | Philadelphia | Pittsburgh | Greenville County | Memphis City | Nashville Davidson | Austin | Ft. Worth | Houston | Fairfax County | Norfolk City | Richmond | Seattle | Kanawha County | Milwaukee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OR. | PA. | | SC. | TENN. | | TEXAS | | | VIRGINIA | | | WA. | WV. | WIS. |
| FINANCIAL APPLICATIONS | General Expenditure Acctg | 124 | 122 | 122 | | 123 | 122 | 124 | 114 | 124 | 121 | 122 | 322 | 124 | 111 | 323 |
| | Accts Receivable | | | | | | 122 | | | | | | 122 | 124 | | |
| | Budget Development | 124 | 324 | 122 | | | 122 | 124 | | | 121 | 122 | 123 | 124 | 121 | 124 |
| | Payroll | 124 | 324 | 122 | | 123 | 122 | 124 | 114 | 122 | | 122 | 122 | | | 322 |
| | Accts Payable | X | X | X | X | X | X | | X | X | | X | X | X | X | X |
| | School Lunch Income & Exp. Acctg | X | | X | | X | X | | | X | | X | X | X | | |
| | Salary Cost Projections | X | X | X | X | X | X | X | | X | X | | X | | | X |
| | PPBS Program Cost Analysis | X | | | | | | X | | X | X | | | | | |
| | Job Cost Acctg | X | | X | | X | | X | | | | | X | X | | X |
| PERSONNEL APPLICATIONS | Employee Data Base | 124 | 122 | 122 | 124 | 123 | 122 | 124 | 114 | 122 | 121 | 122 | 122 | 324 | | 123 |
| | Position Control | | 124 | 122 | | | | 124 | | | 121 | | 122 | 324 | | |
| | Recruitment & Hiring | | | 122 | | | 122 | | | | 121 | | | | | |
| | Certification | | 122 | | | 123 | 122 | | | | 121 | | | 324 | | |
| | Inservice Training | | | | | X | | | | | | | | | X | |
| | Employee Retirement | | | X | | X | X | X | X | | X | | X | X | X | |
| | Substitute Teachers | | X | | | X | X | | | | X | | X | X | | |

TABLE 4.--continued

| | Application | Birmingham City | Mobile | Fresno | Garden Grove | Los Angeles | Mt. Diablo | Oakland | Sacramento | San Diego | San Juan | Denver | Jefferson County | Brevard County | Broward County | Dade County | Hillsborough County | Palm Beach County | Pinellas County | Chicago |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ALA. | | CALIFORNIA | | | | | | | | COLO. | | FLORIDA | | | | | | IL. |
| INSTRUCTIONAL/NON-INSTRUCTIONAL MATERIAL APPLICATIONS | Instructional Materials Inv. | | | 124 | | 224 | | | 122 | 124 | 121 | | | | 123 | | | | | 124 |
| | Instr. Mat. Booking & Sched. | | | | | 121 | | | | 124 | | | | | 123 | | | | | |
| | Library & Textbook Ordering | | | 124 | | 224 | 121 | | | 124 | 121 | | 122 | 124 | | | | | | 123 |
| | Warehouse Inv. & Requisitioning | | | 124 | 114 | 123 | 121 | 324 | 123 | 124 | 121 | 123 | 122 | 124 | 123 | | | | | 123 |
| | Purchasing | X | | | X | X | | X | X | | X | | | X | X | | | | | X |
| | Instr. Mat. Catalogues | | | X | | | X | | X | | X | | X | X | X | | | | | X |
| | Library Operations Support | | | | | X | | | | X | X | | | | | | | | | |
| | Bibliographic Data Base | | | | | X | | | | X | X | | | | | | | | | |
| | School Lunch Planning, Ordering, & Inventory | | | | | X | X | X | X | | | X | X | | X | X | | X | | |

TABLE 4.--continued

| | Application | Fort Wayne | Gary | Shawnee Mission | Jefferson County | Caddo Parish | East Baton Rouge | New Orleans | Anne Arundel | Baltimore City | Baltimore County | Montgomery County | Prince George's County | Boston | Detroit | Flint | St. Louis | Clark County | Albuquerque | Winston-Salem/ Forsyth |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | IND. | | KA. | KN. | LA. | | | MARYLAND | | | | | MASS. | MICH. | | MO. | NEV. | NM. | NC. |
| INSTRUCTIONAL/NON-INSTRUCTIONAL MATERIAL APPLICATIONS | Instructional Materials Inv. | | | 124 | | | | | | | 324 | | 124 | | | | 124 | | 124 | |
| | Instr. Mat. Booking & Sched. | | | | | | | | | | | | | 121 | | | 124 | 123 | | |
| | Library & Textbook Ordering | | | 124 | | | | | 222 | 121 | 324 | | | 121 | 123 | 123 | 124 | | 123 | |
| | Warehouse Inv. & Requisitioning | | | 124 | | | 124 | | | 121 | | 122 | | 121 | 322 | 123 | 122 | | 124 | |
| | Purchasing | | | X | X | | X | | | | X | | X | | X | X | X | X | X | |
| | Instr. Mat. Catalogues | | | X | | | | X | | | X | X | | | | | X | | X | |
| | Library Operations Support | | | X | | | | | | | | | | | | X | X | | X | |
| | Bibliographic Data Base | | | X | | | | | | | | | | | | | X | | | |
| | School Lunch Planning, Ordering, & Inventory | | | X | | | | | | | | | X | | X | | X | | | |

TABLE 4.--continued

| | Application | Newark | Cincinnati | Toledo | Tulsa | Portland | Philadelphia | Pittsburgh | Greenville County | Memphis City | Nashville Davidson | Austin | Ft. Worth | Houston | Fairfax County | Norfolk City | Richmond | Seattle | Kanawha County | Milwaukee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | NJ. | OHIO | | OK. | OR. | PA. | | SC. | TENN. | | TEXAS | | | VIRGINIA | | | WA. | W.V. | WI. |
| INSTRUCTIONAL/NON-INSTRUCTIONAL MATERIAL APPLICATIONS | Instructional Materials Inv. | | | | | | 122 | | | 123 | | | | | | | | | | 123 |
| | Instr. Mat. Booking & Sched. | | | | | | 322 | | | | | | | | | | | | 121 | 324 |
| | Library & Textbook Ordering | 124 | | | 121 | | 122 | | | | | | | 122 | 121 | 122 | 122 | 124 | | 124 |
| | Warehouse Inv. & Requisitioning | | 121 | 124 | 121 | | 322 | | | 123 | 114 | 124 | | 122 | 121 | 122 | 122 | 124 | | 124 |
| | Purchasing | | | | | X | X | X | | | X | X | | | | X | X | X | | X |
| | Instr. Mat. Catalogues | | | X | X | | X | | | | | | | X | X | X | | X | | X |
| | Library Operations Support | | | | | | | X | | | X | | | | | | X | | | X |
| | Bibliographic Data Base | | | | | | | | | | | | | | | | | | | |
| | School Lunch Planning, Ordering, & Inventory | | | | X | X | | | | X | X | X | | X | | X | X | X | | X |

TABLE 4.--continued

| | Application | Birmingham City | Mobile | Fresno | Garden Grove | Los Angeles | Mt. Diablo | Oakland | Sacramento | San Diego | San Juan | Denver | Jefferson County | Brevard County | Broward County | Dade County | Hillsborough County | Palm Beach County | Pinellas County | Chicago |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ALA. | | CALIFORNIA | | | | | | | | COLO. | | FLORIDA | | | | | | IL. |
| FACILITIES & EQUIPMENT APPLICATIONS | Facilities Inventory | 124 | 121 | 124 | | 324 | | | | | 121 | | | | | | | | | 123 |
| | Facilities Construction Project Control | | | | | | | | | | 121 | | | 213 | | | | | | |
| | Work Order Request Scheduling | | | | | | | 121 | | | | | | | 123 | | | | | |
| | Bus Scheduling & Routing | | | | | | | | | | | | | | | | 114 | | | |
| | Equipment Inventory | X | X | | | X | | | X | X | X | | X | X | X | | X | | X | |
| | Preventive Maintenance Scheduling | | | | | X | | | | X | | | | | | | | | | |
| | Facilities Utilization & Evaluation | | | | | | | | | | | | | | X | | | | | |
| | Equipment Utilization & Evaluation | | | | | | | | | | X | | X | X | X | | | | | |
| | Future Facilities Planning | | | | | | | | | | | | | | X | | X | X | | |

TABLE 4.--continued

| | Application | Fort Wayne, IND. | Gary, IND. | Shawnee Mission, KA. | Jefferson County, KN. | Caddo Parish, LA. | East Baton Rouge, LA. | New Orleans, LA. | Anne Arundel, MARYLAND | Baltimore City, MARYLAND | Baltimore County, MARYLAND | Montgomery County, MARYLAND | Prince George's County, MARYLAND | Boston, MASS. | Detroit, MICH. | Flint, MICH. | St. Louis, MO. | Clark County, NEV. | Albuquerque, NM. | Winston-Salem/ Forsyth, NC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACILITIES & EQUIPMENT APPLICATIONS | Facilities Inventory | | | | | | | | | 121 | | | 124 | | | | | | | |
| | Facilities Construction Project Control | | | | | | | | | | | | 124 | | | | | 123 | | |
| | Work Order Request Scheduling | | | | | | | | | | | | | | | | | | | |
| | Bus Scheduling & Routing | | | X | | | | | | | | | | | | | | | | 124 |
| | Equipment Inventory | | | | | | | | | | | X | X | X | X | | | | X | |
| | Preventive Maintenance Scheduling | X | | | | | | | | | | | | | | | | | | |
| | Facilities Utilization & Evaluation | | | | | | | | | | | | | | | | | | | |
| | Equipment Utilization & Evaluation | | | | | | | | | | | | | | | | | | | |
| | Future Facilities Planning | | | | | | | | | | | | X | | | | | | | |

TABLE 4.--continued

| | Application | Newark | Cincinnati | Toledo | Tulsa | Portland | Philadelphia | Pittsburgh | Greenville County | Memphis City | Nashville Davidson | Austin | Ft. Worth | Houston | Fairfax County | Norfolk City | Richmond | Seattle | Kanawha County | Milwaukee |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | NJ. | OHIO | | OK. | OR. | PA. | | SC. | TENN. | | TEXAS | | | VIRGINIA | | | WA. | W.V. | WI. |
| FACILITIES & EQUIPMENT APPLICATIONS | Facilities Inventory | | 121 | | | | 122 | 122 | | 113 | | 124 | | | | | 123 | | | |
| | Facilities Construction Project Control | | | | | | | | | | | | | | | | | 123 | | 324 |
| | Work Order Request Scheduling | | | | | | | | | | | | | | | | | 123 | | |
| | Bus Scheduling & Routing | | | | | | | | 114 | | 314 | | | | | | | | | |
| | Equipment Inventory | | X | | | | | | | X | | | | | | | X | X | | |
| | Preventive Maintenance Scheduling | | | | | | | | | | | | | | | | | | | |
| | Facilities Utilization & Evaluation | | | | | | | | | | | | | | | | | | | |
| | Equipment Utilization & Evaluation | | | | | | | | | | | X | | | | | | | | |
| | Future Facilities Planning | | | | | | | | | | | | | | | | | | | |

TABLE 5.--Methods of development[a] for selected administrative computer applications, reported as of March/April, 1972. (Percent[b])

| Application[c] | N[d] | Group I Source of Staffing | | | Group II Source of Software | | Group III Generation of Computer | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Inhouse | Contractor | Combined | Package | Original | 1st/2nd gen. | Emulation | Converted | Orig. 3rd. gen. |
| Pupil | | | | | | | | | | |
| 1. Pupil data base | 29 | [illegible] | 0 | 17 | 14 | 86 | 7 | 10 | 35 | 48 |
| 2. Pupil scheduling | 52 | [illegible] | 4 | 39 | 85 | 15 | 12 | 17 | 15 | 56 |
| 3. Pupil attendance | 36 | 83 | 3 | 14 | 8 | 92 | 14 | 11 | 33 | 42 |
| 4. Report cards | 39 | 92 | 0 | 8 | 5 | 95 | 15 | 15 | 23 | 46 |
| Financial | | | | | | | | | | |
| 11. General expenditure acct. | 50 | 80 | 0 | 20 | 14 | 86 | 16 | 24 | 16 | 44 |
| 12. Accounts receivable | 21 | 81 | 0 | 19 | 10 | 91 | 10 | 29 | 19 | 43 |
| 13. Budget development | 38 | 84 | 0 | 16 | 5 | 95 | 16 | 16 | 18 | 50 |
| 14. Payroll | 48 | 79 | 0 | 21 | 6 | 94 | 13 | 31 | 25 | 31 |
| Personnel | | | | | | | | | | |
| 20. Employee data base | 49 | 94 | 0 | 6 | 6 | 94 | 16 | 22 | 27 | 35 |
| 21. Position control | 23 | 87 | 4 | 9 | 0 | 100 | 9 | 17 | 17 | 57 |
| 23. Certification | 24 | 92 | 0 | 8 | 8 | 92 | 21 | 21 | 29 | 29 |
| Facilities & equipment | | | | | | | | | | |
| 27. Facilities inventory | 14 | 93 | 0 | 7 | 7 | 93 | 29 | 14 | 21 | 36 |
| Instr./non-instr. material | | | | | | | | | | |
| 36. Instr. material inventory | 14 | 86 | 7 | 7 | 0 | 100 | 7 | 14 | 14 | 64 |
| 38. Library & textbook ord. | 26 | 85 | 8 | 8 | 0 | 100 | 23 | 23 | 15 | 39 |
| 39. Warehouse inv. & requis. | 35 | 89 | 0 | 11 | 6 | 94 | 20 | 23 | 17 | 40 |

[a]Column headings refer to methods of development. See Part III of the survey instrument, page

[b]Percent of N indicating that the method of development was used for that application. One method was indicated by the respondent within each of the three groups.

[c]Applications with N <14 are omitted.

[d]N=Number of school districts providing usable answers to the questions about methods of development.

SECTION 5

BENEFIT SUMMARY

**Page 35:** Table 6.--Benefits reported to have resulted to a significant or moderate degree as of March/April, 1972, summary

- summarizes the per cent of responding school districts reporting significant or moderate results for selected applications, and the benefits

**Page 36:** Table 7.--Rank-order of applications according to frequency of success

- ranks certain applications according to the frequency with which benefits were indicated to result

**Page 36:** Table 8.--Rank-order of benefits for successful applications, according to frequency reported

- ranks the benefits according to the frequency with which they were reported for those applications in the upper half of the success ranking

**Page 37:** Table 9.--Applications reported as showing positive or negative benefits more frequently than might be expected when compared to the general responses for the application area

- indicates which applications showed positive or negative benefits considering the application area only

**Page 38:** Table 10.--Applications reported as showing positive or negative benefits more frequently than might be expected when compared to the general responses for all application areas

- indicates which applications showed positive or negative benefits considering all application areas

NOTE TO TABLES 9 & 10: A contingency table analysis was used to determine the applications for which the number of school districts reporting significant or moderate results exceeded the expected frequency at a statistically significant level (.05).

For Table 9, a "+" for an application indicates that the benefit resulted more frequently than would be expected considering all responses for that application area only. A "-" for an application indicates that the benefit resulted less frequently than would be expected considering the responses for all applications in that application area only.

For Table 10, a "+" or "-" considers the responses for all applications in all application areas.

**Pages 39-41:** Table 11.--Applications reported as showing positive or negative benefits more frequently than might be expected when compared to the general responses, for certain methods of development

- ↑ indicates which methods of development showed positive or negative results for certain benefit categories for each application

NOTE TO TABLE 11: A contingency table analysis was used to determine the methods of development for each application for which the number of school districts reporting significant or moderate results exceeded the expected frequency at a statistically significant level (.05).

A "+" for a method of development, for a given application, indicates that the benefit resulted more frequently than would be expected considering all responses for that method of development category and application. A "-" has the opposite meaning.

For example, the responses indicate that, for the Pupil Scheduling application, use of a software package yields improved information and extended service, and all benefits, more frequently than would be expected, considering the responses for source of software.

TABLE 6. — Benefits[a] reported to have resulted to a significant or moderate degree as of March/April, 1972. (Percent)[b]

| Application | N[d] | Improved Information | | | | | Improved Efficiency | | | Extended Service | | | Reduced Costs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Access-ible | Widely Dissem. | Current Timely | Accurate Reliable | Compre-hensive | Staff Perform. | Proce-dures | Flexi-bility | New Info. | Extnd. Capabil. | Better Info. | Reduced Dupli. | Staff Reduced | Better Util. |
| Pupil | | | | | | | | | | | | | | | |
| 01. Pupil data base | 29 | 93 | 93 | 100 | 100 | 90 | 64 | 90 | 90 | 79 | 86 | 90 | 59 | 03 | 62 |
| 02. Pupil scheduling | 52 | 90 | 83 | 86 | 98 | 88 | 85 | 94 | 79 | 92 | 96 | 69 | 52 | 35 | 90 |
| 03. Pupil attendance | 36 | 92 | 89 | 86 | 89 | 83 | 69 | 100 | 75 | 86 | 92 | 83 | 67 | 33 | 78 |
| 04. Report cards | 39 | 90 | 87 | 90 | 92 | 90 | 82 | 92 | 87 | 90 | 97 | 92 | 72 | 36 | 90 |
| Financial | | | | | | | | | | | | | | | |
| 11. General expenditure acct. | 50 | 98 | 96 | 98 | 94 | 92 | 88 | 92 | 82 | 90 | 92 | 92 | 72 | 70 | 94 |
| 12. Accounts receivable | 21 | 100 | 100 | 100 | 100 | 86 | 95 | 95 | 90 | 90 | 90 | 86 | 71 | 62 | 95 |
| 13. Budget development | 38 | 100 | 89 | 95 | 95 | 92 | 89 | 97 | 89 | 95 | 95 | 79 | 63 | 55 | 89 |
| 14. Payroll | 48 | 98 | 92 | 94 | 98 | 92 | 87 | 94 | 83 | 87 | 94 | 83 | 85 | 73 | 94 |
| Personnel | | | | | | | | | | | | | | | |
| 20. Employee data base | 49 | 98 | 94 | 96 | 96 | 86 | 80 | 96 | 82 | 88 | 98 | 88 | 75 | 57 | 80 |
| 21. Position control | 23 | 100 | 100 | 91 | 96 | 87 | 83 | 91 | 74 | 100 | 87 | 78 | 65 | 65 | 78 |
| 23. Certification | 24 | 92 | 79 | 79 | 71 | 67 | 67 | 87 | 58 | 79 | 92 | 75 | 62 | 50 | 75 |
| Facilities & equipment | | | | | | | | | | | | | | | |
| 27. Facilities inventory | 14 | 79 | 71 | 79 | 79 | 86 | 50 | 64 | 50 | 79 | 71 | 86 | 64 | 14 | 50 |
| Instr./non-instr. material | | | | | | | | | | | | | | | |
| 36. Instru. material inventory | 14 | 100 | 93 | 100 | 100 | 93 | 86 | 100 | 93 | 100 | 93 | 71 | 79 | 42 | 93 |
| 38. Library & textbook ord. | 26 | 85 | 88 | 96 | 100 | 88 | 85 | 96 | 85 | 88 | 81 | 58 | 85 | 77 | 100 |
| 39. Warehouse inv. & requis. | 35 | 97 | 89 | 97 | 97 | 97 | 89 | 83 | 80 | 91 | 83 | 74 | 86 | 69 | 83 |

[a]Column headings refer to benefits resulting. See Part III of the survey instrument, page
[b]Percent of N indicating that the benefit resulted to a significant or moderate degree.
[c]Applications with n <14 are omitted.
[d]N = Number of school districts providing usable answers to the questions about benefits.

Table 7. -- Rank-order of applications according to frequency of success.

| Application | Rank | No. of benefits in upper 50 percent |
|---|---|---|
| 11. General expenditure accounting | 1 | 12 |
| 12. Accounts receivable | 1 | 12 |
| 14. Payroll | 1 | 12 |
| 36. Instructional materials inv. | 1 | 12 |
| 13. Budget development | 2 | 11 |
| 20. Employee data base | 3 | 10 |
| 38. Library & textbook ordering | 4 | 9 |
| 39. Warehouse inventory | 4 | 9 |
| 02. Pupil scheduling | 5 | 7 |
| 01. Pupil data base | 6 | 6 |
| 04. Report cards | 6 | 6 |
| 21. Position control | 7 | 5 |
| 03. Pupil attendance | 8 | 4 |
| 23. Certification | 9 | 1 |
| 27. Facilities inventory | 9 | 1 |

Table 8. -- Rank-order of benefits for successful applications, according to frequency reported.

| Benefit | Rank | No. of applications in upper 50 percent |
|---|---|---|
| 03. Current, timely | 1 | 8 |
| 04. Accurate, reliable | 1 | 8 |
| 01. Accessible | 2 | 7 |
| 02. Widely disseminated | 2 | 7 |
| 07. Improved procedures | 2 | 7 |
| 05. More comprehensive | 3 | 6 |
| 09. New information | 4 | 5 |
| 10. Extended capabilities | 4 | 5 |
| 14. Better utilization | 4 | 5 |
| 06. Staff performance | 5 | 2 |
| 08. Flexibility | 5 | 2 |
| 11. Better information | 5 | 2 |
| 12. Reduced duplication | 6 | 0 |
| 13. Staff reduced | 6 | 0 |

TABLE 9.--Applications reported as showing positive or negative benefits more frequently than might be expected when compared to the general responses for the application area

| Application | + or - | Benefit Category |
|---|---|---|
| Pupil | | |
| 1. Pupil data base | + | Improved information |
| | - | Reduced costs |
| | - | All benefits |
| 2. Pupil scheduling | + | Improved information |
| 3. Pupil attendance | - | Improved information |
| Personnel | | |
| 20. Employee data base | + | Improved information |
| | + | All benefits |
| 21. Position control | + | All benefits |
| 23. Certification | - | Improved information |
| | - | Improved efficiency |
| | - | All benefits |
| Facilities & equipment | | |
| 27. Facilities inventory | - | Improved efficiency & reduced costs |
| 29. Work order requests | + | Improved efficiency & reduced costs |
| 30. Bus scheduling | + | Improved efficiency & reduced costs |
| Instr./non-instr. material | | |
| 36. Instru. mat. inventory | + | Improved information & extended service |
| 37. Instru. mat. bking. & sch. | - | Improved information & extended service |
| | - | All benefits |

TABLE 10.--Applications reported as showing positive or negative benefits more frequently than might be expected when compared to the general responses for all application areas

| Application | + or - | Benefit Category |
|---|---|---|
| 1. Pupil data base | - | Reduced costs |
| 13. Budget development | - | Reduced costs |
| 23. Certification | - | Improved information |
| | - | Improved efficiency |
| | - | All benefits |
| 27. Facilities inventory | - | Improved information |
| | - | Improved efficiency |
| | - | Reduced costs |
| | - | All benefits |
| 38. Library & textbook ord. | + | Reduced costs |

TABLE 11.--Applications reported as showing positive or negative benefits more frequently than might be expected when compared to the general responses, for certain methods of development.

| | Application | I.Staff II.Software III.Computer | Method of Development[a] | + or - | Benefit Category[a] |
|---|---|---|---|---|---|
| Pupil Applications | Pupil data base | | | | No significant finding |
| | Pupil scheduling | | | | No significant finding |
| | Pupil attendance | Soft | Package | + | Improved information & extended service |
| | | | | + | All benefits |
| | | Comp | Orig. 3rd gen. | - | Improved information & extended service |
| | | | | - | All benefits |
| | Report cards | Comp | Orig. 3rd gen. | + | Improved efficiency & reduced costs |
| | | | 1st/2d gen. | - | All benefits |
| Financial Applications | General exp. acctg. | Soft | Package | + | Improved information & extended service |
| | | Comp | 1st/2d gen. | - | Improved efficiency & reduced costs |
| | | | | - | All benefits |
| | | | Orig. 3rd gen. | + | Improved efficiency & reduced costs |
| | Accounts receivable | Comp | Orig. 3rd gen. | + | All benefits |
| | Budget development | Staff | Combined | - | Improved information & extended service |
| | | | | - | All benefits |
| | | Comp | Orig. 3rd gen. | + | Improved information & extended service |
| | | | Other | - | Improved information & extended service |
| | | | 1st/2d gen. | - | All benefits |
| | | | Emulation | + | All benefits |
| | Payroll | | | | No significant finding |

[a]See Part III of the survey instrument, page 43.

TABLE 11.--continued

| | Application | I.Staff II.Software III.Computer | Method of Development[a] | + or - | Benefit Category[a] |
|---|---|---|---|---|---|
| Personnel Applications | Employee data base | Soft | Package | - | Improved efficiency & reduced costs |
| | | | | - | All benefits |
| | Position control | Staff | Contractor or combined | + | All benefits |
| | | Comp | 1st/2d gen. or emulation or conversion | - | Improved efficiency & reduced costs |
| | | | Conversion | - | All benefits |
| | Recruitment & hiring | Comp | Orig. 3rd gen. | + | Improved efficiency & extended service |
| | | | Other | - | Improved efficiency & extended service |
| | | | Orig. 3rd gen. | + | All benefits |
| | Certification | Staff | Combined | + | Improved information & extended service |
| | | Soft | Package | + | Improved information & extended service |
| | | Comp | Conversion | - | Improved information & extended service |
| | | | Orig. 3rd gen. | + | Improved information & extended service |
| | | | Conversion | - | All benefits |
| | | | Emulation | + | All benefits |
| Facilities & Equipment Applications | Facilities inventory | Staff | Combined | + | Improved efficiency & reduced costs |
| | | Soft | Original | - | Improved efficiency & reduced costs |
| | | | | - | All benefits |
| | | Comp | Conversion | - | All benefits |
| | Facilities construction project control | Comp | Orig. 3rd gen. | + | All benefits |
| | Work order requests scheduling | Comp | 1st/2d gen. | - | Improved information & extended service |
| | | | Conversion | + | Improved information & extended service |
| | | | 1st/2d gen. | - | All benefits |
| | | | Conversion | + | All benefits |

[a]See Part III of the survey instrument, page 43.

TABLE 11.--continued

| | Application | I.Staff II.Software III.Computer | Method of Development[a] | + or - | Benefit Category[a] |
|---|---|---|---|---|---|
| Facilities & Equipment Applications | Bus scheduling & routing | Staff | Combined | + | All benefits |
| Instructional/Non-Instructional Material Applications | Instructional mat. inv. | Staff | Combined or contractor | - | All benefits |
| | Instr. mat. booking & scheduling | Staff | Combined | - | Improved efficiency & reduced costs |
| | | Comp | Orig. 3rd gen. | + | Improved information & extended service |
| | | | | + | Improved efficiency & reduced costs |
| | | | | + | All benefits |
| | Library & textbook ord. | Staff | Contractor or combined | - | Improved information & extended service |
| | | | | - | All benefits |
| | | Comp | 1st/2d gen. | - | All benefits |
| | Warehouse inv. & req. | Staff | Combined | - | Improved information & extended service |
| | | | | - | Improved efficiency & reduced costs |
| | | | | - | All benefits |
| | | Soft | Package | + | All benefits |

[a]See Part III of the survey instrument, page 43.

# APPENDICES

**Pages 43-46:** Survey instrument

**Pages 47-49:** Descriptions of individual applications

**Pages 50-51:** Definition of benefits

PART I

TO BE COMPLETED BY THE CHIEF COMPUTER SYSTEMS EXECUTIVE

AEDS LARGE SCHOOL SYSTEM SURVEY

## ABOUT YOUR PARTICIPATION

1. DO YOU WANT TO RECEIVE AT COST A DIRECTORY CONTAINING THE DETAILS RESULTING FROM THIS SURVEY? . . . . . _____

2. MAY THE SURVEY ANSWERS FOR YOUR SCHOOL DISTRICT BE INCLUDED IN A DETAILED DIRECTORY? IF YOU WISH CERTAIN ANSWERS EXCLUDED, WRITE NO NEXT TO THOSE ANSWERS AS YOU COMPLETE THE SURVEY. YOUR ANSWERS WILL BE HELD IN COMPLETE & STRICT CONFIDENCE AS YOU SO INDICATE. (PLEASE COMPLETE THE SURVEY REGARDLESS OF YOUR ANSWER TO THIS QUESTION). . _____

## ABOUT YOUR ORGANIZATION

(cc 1) 01 (cc 3) _____

3. APPROXIMATELY HOW MANY STAFF DOES THE SCHOOL SYSTEM EMPLOY WITH DIRECT OR INDIRECT ASSIGNMENTS IN THE AREA OF COMPUTER BASED INFORMATION SYSTEMS?

(cc 6)

- MANAGEMENT/SUPERVISION. . . . . _____
- CLERICAL SUPPORT. . . . . _____
- SYSTEMS . . . . . _____
- ANALYST-PROGRAMMERS . . . . . _____
- PROGRAMMERS . . . . . _____
- COMPUTER OPERATIONS & SUPPORT . . . . . _____
- TOTAL . . . . . _____

4. APPROXIMATELY HOW MANY TOTAL STAFF DOES THE SCHOOL SYSTEM EMPLOY?. . . . . (cc 21) _____

5. APPROXIMATELY WHAT IS THE TOTAL FY 72 OPERATING BUDGET FOR:

(cc 23)

- THE ENTIRE SCHOOL SYSTEM. . . . . $ _____
- COMPUTER BASED INFORMATION SYSTEMS. . . . . $ _____

(cc 1) 02 (cc 3) _____

6. PLEASE PRINT THE FOLLOWING INFORMATION ABOUT EACH COMPUTER CONFIGURATION:

| | (A) (cc 6) | (B) (cc 15) | (C) (cc 24) |
|---|---|---|---|
| MANUFACTURER . . . . . | | | |
| MODEL. . . . . | | | |
| TOTAL CORE . . . . . | | | |
| OWN, LEASE, OR RENT. . | | | |
| MONTH, YEAR INSTALLED. . | | | |

7. PLEASE PRINT THE FOLLOWING INFORMATION ABOUT THE CHIEF COMPUTER SYSTEMS EXECUTIVE FOR YOUR SCHOOL SYSTEM:

(cc 1) 03 (cc 3) _____

- NAME . . . . . (cc 6) _____
- TITLE. . . . . (cc 30) _____
- TELEPHONE. . . . . (cc 54) AC: /NUMBER: - EXT: X _____

(cc 1) 04 (cc 3) _____

- NAME OF SCHOOL SYSTEM. . (cc 6) _____
- BUSINESS ADDRESS . . . . (cc 40) STREET: _____
  (cc 60) CITY: _____
  (cc 74) STATE: _____ (cc 76) ZIP _____

PLEASE TURN TO THE BACK OF THIS PAGE & ANSWER PART II - - - - - -►

PART II

ABOUT APPLICATIONS

8. INSTRUCTIONS: PLEASE CHECK EACH OF THE FOLLOWING APPLICATIONS WHICH ARE PARTIALLY (INCLUDING PILOT) OR COMPLETELY OPERATIONAL. OMIT THOSE WHICH ARE IN THE DEVELOPMENT STAGE BUT ARE NOT OPERATIONAL.

PUPIL APPLICATIONS (cc 37)

1. PUPIL DATA BASE (CUMULATIVE RECORDS). . . . . ☐
2. PUPIL SCHEDULING. . . . . ☐
3. PUPIL ATTENDANCE. . . . . ☐
4. REPORT CARDS. . . . . ☐
5. TEST SCORING AND ANALYSIS . . . . . —
6. PUPIL REGISTRATION. . . . . —
7. PUPIL CENSUS. . . . . —
8. ENROLLMENT FORECASTING. . . . . —
9. HEALTH AND IMMUNIZATION . . . . . —
10. GUIDANCE AND COUNSELLING. . . . . —
xx. _____ . . . —
xx. _____ . . . —

FINANCIAL APPLICATIONS (cc 47)

11. GENERAL EXPENDITURE ACCOUNTING. . . . . ☐
12. ACCOUNTS RECEIVABLE . . . . . ☐
13. BUDGET DEVELOPMENT. . . . . ☐
14. PAYROLL . . . . . ☐
15. ACCOUNTS PAYABLE. . . . . —
16. SCHOOL LUNCH INCOME & EXPENSE ACCOUNTING. . . . . —
17. SALARY COST PROJECTIONS . . . . . —
18. PPBS PROGRAM COST ANALYSIS. . . . . —
19. JOB COST ACCOUNTING (MAINT., & OPERATIONS). . . . . —
xx. _____ . . . —
xx. _____ . . . —

PERSONNEL APPLICATIONS (cc 56)

20. EMPLOYEE DATA BASE. . . . . ☐
21. POSITION CONTROL. . . . . ☐
22. RECRUITMENT AND HIRING. . . . . ☐
23. CERTIFICATION . . . . . ☐
24. INSERVICE TRAINING. . . . . —
25. EMPLOYEE RETIREMENT . . . . . —
26. SUBSTITUTE TEACHERS . . . . . —
xx. _____ . . . —
xx. _____ . . . —

FACILITIES AND EQUIPMENT APPLICATIONS (cc 63)

27. FACILITIES INVENTORY. . . . . ☐
28. FACILITIES CONSTRUCTION PROJECT CONTROL . . . . . ☐
29. WORK ORDER REQUESTS SCHEDULING. . . . . ☐
30. BUS SCHEDULING AND ROUTING. . . . . ☐
31. EQUIPMENT INVENTORY . . . . . —
32. PREVENTIVE MAINTENANCE SCHEDULING . . . . . —
33. FACILITIES UTILIZATION & EVALUATION . . . . . —
34. EQUIPMENT UTILIZATION & EVALUATION. . . . . —
35. FUTURE FACILITIES PLANNING. . . . . —
xx. _____ . . . —
xx. _____ . . . —

INSTRUCTIONAL/NON-INSTRUCTIONAL MATERIAL APPLICATIONS (cc 72)

36. INSTRUCTIONAL MATERIALS INVENTORY . . . . . ☐
37. INSTRUCTIONAL MATERIALS BOOKING & SCHEDULING. . . . ☐
38. LIBRARY & TEXTBOOK ORDERING . . . . . ☐
39. WAREHOUSE INVENTORY & REQUISITIONING. . . . . ☐
40. PURCHASING (PURCH. ORDER PREPARATION, STATUS, ETC). —
41. INSTRUCTIONAL MATERIALS CATELOGUES. . . . . —
42. LIBRARY OPERATIONS SUPPORT. . . . . —
43. BIBLIOGRAPHIC DATA BASE (BOOK TITLES, ABSTRACTS). . —
44. SCHOOL LUNCH PLANNING, ORDERING, & INVENTORY. . . . —
xx. _____ . . . —
xx. _____ . . . —

PLEASE TURN TO THE NEXT PAGE & ANSWER PART III - - - - ►

PART III

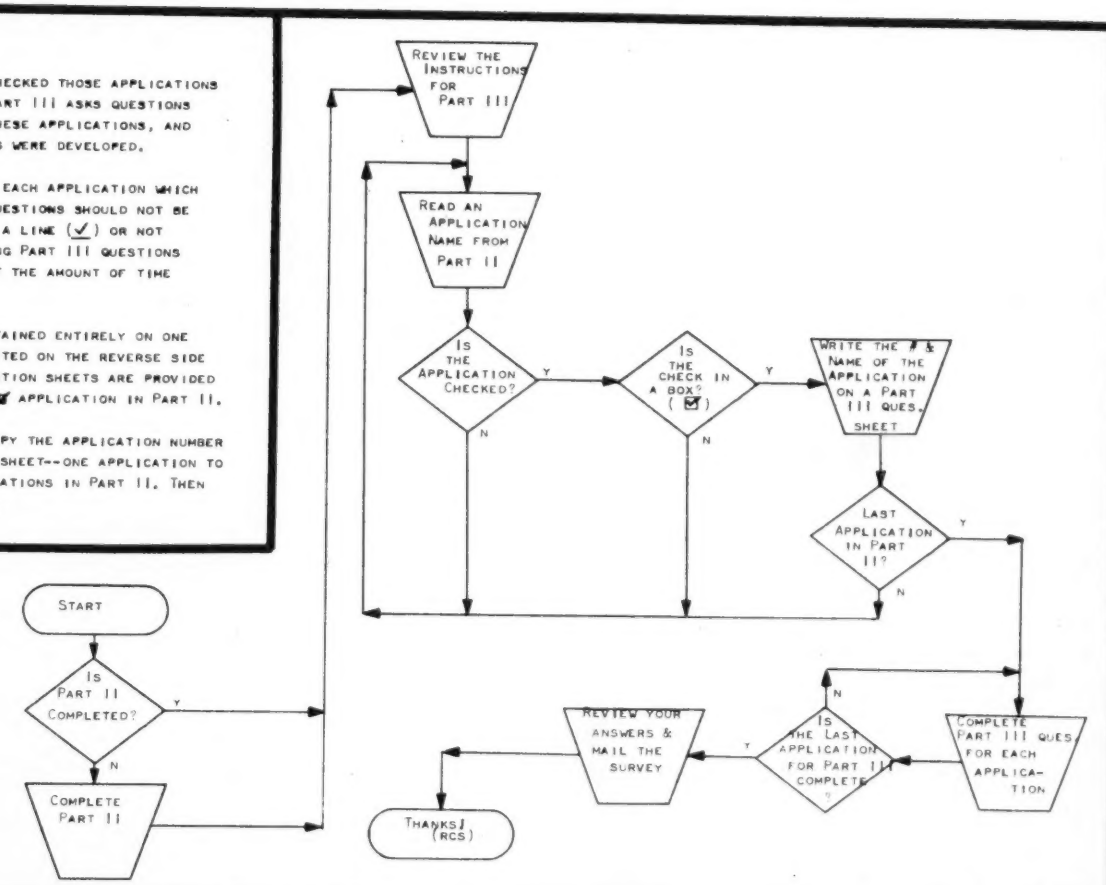
GENERAL INSTRUCTIONS:

YOU HAVE JUST COMPLETED PART II IN WHICH YOU CHECKED THOSE APPLICATIONS WHICH ARE OPERATIONAL IN YOUR SCHOOL SYSTEM. PART III ASKS QUESTIONS ABOUT THE BENEFITS RESULTING FROM CERTAIN OF THESE APPLICATIONS, AND THE METHODS BY WHICH THESE CERTAIN APPLICATIONS WERE DEVELOPED.

PART III QUESTIONS SHOULD BE ANSWERED ONLY FOR EACH APPLICATION WHICH YOU CHECKED IN A BOX (☑) IN PART II. PART III QUESTIONS SHOULD NOT BE ANSWERED FOR APPLICATIONS WHICH ARE CHECKED ON A LINE (✓) OR NOT CHECKED AT ALL (__) IN PART II. WE ARE CONFINING PART III QUESTIONS TO ONLY CERTAIN APPLICATIONS PRIMARILY TO LIMIT THE AMOUNT OF TIME REQUIRED FOR YOU TO COMPLETE THE SURVEY.

THE COMPLETE SET OF PART III QUESTIONS ARE CONTAINED ENTIRELY ON ONE SIDE OF A SHEET. THE SAME QUESTIONS ARE DUPLICATED ON THE REVERSE SIDE OF THE SHEET. SUFFICIENT SETS OF DUPLICATE QUESTION SHEETS ARE PROVIDED FOR YOU TO ANSWER PART III QUESTIONS FOR EACH ☑ APPLICATION IN PART II.

REFERRING TO THE ☑ APPLICATIONS IN PART II, COPY THE APPLICATION NUMBER AND APPLICATION NAME ON ONE SIDE OF A PART III SHEET--ONE APPLICATION TO EACH SIDE OF A SHEET. DO THIS FOR ALL ☑ APPLICATIONS IN PART II. THEN ANSWER PART III QUESTIONS FOR EACH APPLICATION.




PLEASE TURN THE PAGE TO COMPLETE PART III - - - - ➡

(cc 1) 05 (cc 3)

PART III

INSERT THE NUMBER & NAME OF AN APPLICATION CHECKED WITHIN A BOX ☑ FROM PART II - - - - - - - - - - - - ►

(cc 6)

| NUMBER | APPLICATION NAME FROM PART II |
|---|---|
| | |

ABOUT BENEFITS RESULTING

9. INSTRUCTIONS: CIRCLE THE ANSWER LETTER (S M N O A) WHICH APPLIES BEST TO THIS APPLICATION, FOR EACH OF THE BENEFITS BELOW

| BENEFITS | (cc 8) | S = SIGNIFICANT RESULT | M = MODERATE RESULT | N = NO RESULT | O = THE OPPOSITE RESULTED | A = DOES NOT APPLY TO THIS APPLICATION |
|---|---|---|---|---|---|---|
| **IMPROVED INFORMATION** | | | | | | |
| MORE ACCESSIBLE INFORMATION. . . . . | | S | M | N | O | A |
| MORE WIDELY DISSEMINATED INFORMATION . . . . . | | S | M | N | O | A |
| MORE CURRENT, TIMELY INFORMATION . . . . . | | S | M | N | O | A |
| MORE ACCURATE, RELIABLE INFORMATION. . . . . | | S | M | N | O | A |
| MORE COMPREHENSIVE, MEANINGFUL, RELEVANT INFORMATION . . | | S | M | N | O | A |
| **IMPROVED EFFICIENCY** | | | | | | |
| IMPROVED STAFF PERFORMANCE . . . . . | | S | M | N | O | A |
| IMPROVED PROCEDURES FOR COLLECTING, MAINTAINING, OR REPORTING INFORMATION . . . . . | | S | M | N | O | A |
| GREATER FLEXIBILITY TO EXPAND & MODIFY PROCEDURES. . . . | | S | M | N | O | A |
| **EXTENDED SERVICE** | | | | | | |
| NEW INFORMATION FOR BETTER MANAGEMENT DECISIONS. . . . . | | S | M | N | O | A |
| EXTENDED CAPABILITY TO ANALYZE, COMPARE, INTERRELATE, & INTERPRET INFORMATION . . . . . | | S | M | N | O | A |
| BETTER INFORMATION FOR RESEARCH--GREATER VOLUME OF INFORMATION, MORE COMPREHENSIVE INFORMATION . . . . . | | S | M | N | O | A |
| **REDUCED COSTS** | | | | | | |
| REDUCED DUPLICATION IN STORAGE, MAINTENANCE OR REPORTING OF INFORMATION. . . . . | | S | M | N | O | A |
| STAFF INCREASES PREVENTED, OR NUMBER OF STAFF REQUIRED REDUCED . . . . . | | S | M | N | O | A |
| BETTER UTILIZATION OF EQUIPMENT, FACILITIES, OR STAFF. . | | S | M | N | O | A |

ABOUT METHODS OF DEVELOPMENT

10. INSTRUCTIONS: CHECK THE ONE ITEM IN EACH OF GROUPS I, II, & III BELOW WHICH BEST DESCRIBES THE METHODS USED TO DEVELOP THIS APPLICATION. BE SURE TO CHECK ONE IN EACH GROUP.

(cc 22)

GROUP I: CHECK ONE

DEVELOPED USING ENTIRELY INHOUSE STAFF. . . . . _____

DEVELOPED USING ENTIRELY EXTERNAL CONTRACTOR STAFF. . . . . _____

DEVELOPED USING COMBINED INHOUSE STAFF & CONTRACTOR STAFF . . . . . _____

GROUP II: CHECK ONE

ADAPTED AN EXISTING APPLICATION SOFTWARE PACKAGE (I.E., SCHEDULING PACKAGE, PAYROLL PACKAGE, ETC.) FROM ANOTHER ORGANIZATION & ADAPTED IT TO YOUR REQUIREMENTS. . . . . _____

ORIGINAL DEVELOPMENT TAILORED TO REQUIREMENTS OF YOUR SCHOOL SYSTEM. . . . . _____

GROUP III: CHECK ONE

OPERATING ON A 1ST OR 2ND GENERATION COMPUTER . . . . . _____

OPERATING ON A 3RD GENERATION COMPUTER UNDER EMULATION (COMPATIBILITY MODE) . . . . . _____

CONVERTED TO A 3RD GENERATION COMPUTER & ENHANCED A DESIGN ORIGINALLY DEVELOPED FOR OPERATION ON A 1ST OR 2ND GENERATION COMPUTER. . . . . _____

ORIGINALLY DESIGNED & DEVELOPED FOR OPERATION ON A 3RD GENERATION COMPUTER . . . . . _____

(cc 31) _____

IS THIS THE LAST APPLICATION? IF SO, PLEASE COMPLETE THE FOLLOWING:

NUMBER OF APPLICATIONS CHECKED WITHIN A BOX ☑ IN PART II: _____

NUMBER OF APPLICATIONS FOR WHICH PART III WAS COMPLETED: _____

THESE NUMBERS SHOULD BE EQUAL - - - - - - - -

THANK YOU FOR YOUR COOPERATION

PLEASE ANSWER PART III QUESTIONS FOR ANOTHER APPLICATION ON THE REVERSE SIDE OR ON ANOTHER SHEET - - - - - - - - ►

## APPENDIX B

## DESCRIPTIONS OF INDIVIDUAL APPLICATIONS

### Pupil applications

Pupil census deals with the maintenance of resident data used to estimate future direct enrollment.

Enrollment forecasting deals with the projection of pupil enrollment based upon historic trends and pupil census data.

Pupil registration involves the collection and maintenance of basic pupil enrollment data, course requests, and personal identification data.

Pupil scheduling deals with the use of the computer to schedule classes considering such restraints as maximum class size, facility limitations, and elimination of conflicts.

Pupil attendance involves the collection of student attendance records and reasons for absence.

Test scoring and analysis includes the scoring and analysis of standardized tests and/or teacher made tests usually using a mark-sense device.

Report cards involves the collection of student grade information and the printing of report cards often including attendance and test information.

Health and immunization includes the collection of pupil health inventories and maintenance of immunization records on the computer.

Guidance and counseling involves the use of the pupil data base to analyze pupil performance and relate capabilities to interests.

The pupil data base involves the maintenance and printing of complete pupil profiles, transcripts, etc., using data provided from many other applications.

### Financial applications

Salary cost projections deal with a projection of salary expenditures for future years based upon projected teacher requirements (derived from pupil enrollments).

Budget development uses the computer to analyze previous years' financial activity and to maintain planning data about future receipts and expenditures during the budget development process.

Accounts receivable deals with the maintenance and reporting of income or receivable financial accounts, and the generation of invoices.

School lunch income and expenditure accounting involves the maintenance and reporting of financial data reflecting the status of the school lunch activity. This is normally a separate application since school lunch is a self-sustaining function in public schools.

Payroll involves the collection of employee attendance, and the generation of payroll checks and related reports.

General expenditure accounting involves the maintenance of expense accounts for salary and non-salary expenditures.

Accounts payable involves the maintenance of payable accounts and the generation of payment checks.

Job cost accounting includes the maintenance of cost data by job in the maintenance and building operations area.

PPBS program cost analysis involves the analysis of financial accounts by educational programs which are defined in terms of instructional objectives.

Personnel applications

The recruitment and hiring application deals with the maintenance of an applicant data base used in support of the recruiting activities.

The position control application involves the maintenance and reporting of data about the filled and vacancy status of position authorizations.

The employee data base maintains cumulative data on each employee from the time they are hired to retirement or termination.

The certification application deals with the maintenance and reporting of data about the certification status of each teacher.

The inservice training application involves a skills inventory used to determine and keep track of the training needs for employees.

The employee retirement application deals with the maintenance of data on retired employees pertaining to retirement benefits.

Substitute teachers includes the maintenance of data about teacher substitutes and procedures for contacting these substitutes.

Facilities and equipment applications

Facilities inventory deals with the maintenance and reporting of data about the type, characteristics and location of school system facilities.

Equipment inventory deals with the maintenance and reporting of data about the type, characteristics and location of school system equipment.

Facilities construction project control involves the use of the computer to monitor new building construction projects. For the larger school systems, these may involve five to ten new buildings a year.

Work order requests scheduling involves the scheduling of requests for repair of facilities or equipment.

Preventive maintenance scheduling involves the use of the computer to schedule repair of facilities or equipment based upon predefined deterioration factors.

Bus scheduling and routing deals with the scheduling of buses to deliver students to schools on time and the routing of these buses to optimize their use.

Equipment utilization and evaluation involves the use of the computer to analyze the utilization and adequacy of existing equipment.

Facilities utilization and evaluation involves the use of the computer to analyze the utilization and adequacy of existing facilities.

Future facilities planning involves the use of the computer to project facilities requirements based upon projected facilities deterioration and pupil enrollment.

Instructional/non-instructional material applications

Instructional materials inventory deals with the maintenance of inventory status of instructionally oriented material items.

Instructional materials booking and scheduling involves the use of the computer to reserve a central inventory item and schedule centrally located instructional materials for use in the schools.

Library and textbook ordering involves the ordering of library books and textbooks to maintain an inventory level necessary for the instructional program.

Instructional materials catalogues include the computer generation of catalogues identifying the instructional materials available to teachers.

Bibliographic data base involves the maintenance of descriptive information about instructional materials, particularly books, and the generation of selective bibliographic summaries based upon a file search using predefined selection criteria.

Library operations support involves the use of the computer in support of school based libraries by generation of card catalogues, book labels, etc., and the maintenance of school based library inventories.

Warehouse inventory and requisitioning includes the maintenance on the computer of an inventory of expendable and non-expendable supplies and the filling of inventory requisitions from the schools.

Purchasing includes the preparation of purchase orders to satisfy inventory deficiencies and the maintenance of purchase order and vendor status.

School lunch planning, ordering, and inventory involves what the name implies. This is usually developed as a separate application because the school lunch operation is maintained on a self-sufficient basis.

## APPENDIX C

## DEFINITION OF BENEFITS

Improved inf rmation.--These benefits describe the characteristics of the information resulting from the implementation of an administrative computer application:

1. More accessible information: information more readily available to those who require access.

2. More widely disseminated information: more people have access to the information.

3. More current, timely information: recent information is available at the time it is needed.

4. More accurate, reliable information: the information has consistently less error.

5. More comprehensive, meaningful, relevant information: the information covers a greater range of subject areas, is presented in a more meaningful way, and pertains more directly to the needs of the user.

Improved efficiency.--These benefits describe the effect of the application on day-to-day operations.

1. Improved staff performance: as a result of improved information, the product of the educational staff is consistently of higher quality.

2. Improved procedures for collecting, maintaining, or reporting information: staff efficiency is increased because of less redundancy of information, fewer duplicated procedures, and a more streamlined way of doing business.

3. Greater flexibility to expand and modify procedures: because of a more systematic way of conducting business, and because of a higher level of documentation of procedures, a greater capability to modify procedures results.

Extended service.--These benefits describe the extention of capabilities to use the human mind to greater advantage because of the improved nature of the information provided.

1. New information for better management decisions: additional information not previously provided is available which leads to improved decision making.

2. Extended capability to analyze, compare, interrelate, and interpret information: the computer is used to relate existing information in a way not possible by hand resulting in improved decision making.

3. Better information for research--greater volume of information, more comprehensive information: the computer stores a wide range of information which may be accessed for research purposes without the need to conduct expensive surveys.

Reduced costs.--These benefits describe the more effective use of the dollars available to the school system as a result of data processing.

1. Reduced duplication in storage, maintenance or reporting of information: by elimination of duplication, the previous costs of performing the duplicate effort are eliminated.

2. Staff increases prevented, or number of staff required reduced: the application results in fewer staff to produce the same or an improved product, or has prevented increases in staff by absorbing many of the tasks previously performed by hand.

3. Better utilization of equipment, facilities or staff: the application has resulted in a more efficient use of existing resources.